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# PREFACE TO THE FOURTH EDITION.

IN issuing our Fourth Edition, we have to offer our thanks for the warm reception which this work has received not only from the Medical Profession but from the lay officials of Life Insurance Companies. We believe that in many instances a greater uniformity of rating second-class lives has been attained; and at all events by formulating certain proposals for this end, the attention of Medical Advisers of Companies has been especially directed to the subject. Quite recently an Association of Medical Officers of Companies has been formed for the purpose of an interchange of knowledge and of obtaining a greater precision in advising. Advances have been made in the treatment for insurance purposes of proposers who have suffered from temporary Albuminuria or Glycosuria, and particularly where Mitral Disease has been so long tolerated as to offer rational grounds for receiving, with an addition to the premium, cases which were formerly declined.

The great increase of Life Assurance in the Colonies, and especially in South Africa, Canada, Australia, and India, had almost tempted us to write some special paragraphs on the climatic conditions and diseases of those countries, but the subject is too large for our purpose, and could not with propriety be included in this work. All of these great countries are well supplied with medical men of high intelligence, whose reports we are daily receiving,

and who are steadily adding to our knowledge. Statements received from South Africa have made us well aware of some peculiarities of diseases prevalent there. We are told that acute disorders, as Pneumonia and Rheumatic Fever, run a rapid course; that in the upper country (*Veldt*) chronic chest affections do well, and that phthisis rarely originates in the dwellers of the higher altitudes. On the other hand we are warned of the dangers of Hæmaturia from *Bilharzia* in Natal, and other regions, and cautioned against the habits of settlers as often leading to intemperance. With such careful observers to guide us, we have only to offer the advice, to use great caution in selecting lives for the English Companies who are so rapidly extending their business in those countries. The same may be said of India, where Insurance is extending not only among the European, but the native population. We have excellent Medical Advisers in that great Empire, and we await from them more precise information about the duration of Native Life, and the various influences, as Malaria, which affect it.

We commend this Edition, which has been carefully revised, and in some instances corrected, to our readers. On the Actuarial side a new table of Extra Premiums will be found useful in helping to an understanding of a subject which has been often misinterpreted. Lastly, we must again call attention to the tables in the Appendix, which represent actual business done by certain offices, but for the rating adopted in which we are not responsible.

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# INTRODUCTION.

THE duties of the medical adviser of a Life Assurance Company consist in an application of his knowledge of all the circumstances which may tend to shorten the natural duration of human life.

These circumstances may comprise an inherited tendency to certain affections, the actual presence of, or former attacks of disease, or the habits and surroundings of the proposer. With these the medical adviser has to deal, and of these he is to be the faithful reporter to the company who employ him.

In reviewing the evidence submitted to him, whether personally or by document, regarding every individual proposing to assure, he has to begin by a classification into which every case will fall—(1) the entirely ineligible, (2) the eligible with an addition to the premium, and (3), those eligible at the ordinary or tabular rates of payment as prepared by the insurance company. Of these, the second will be found the most difficult to deal with. Certain lesions of organs easy to recognise will decide as to the first, though even here will be found cases which many advisers would pass on into the class which may be

accepted at a higher payment. Especial attention has been given in these pages to collect information which may lead to a fair discrimination between the two, but although rules are laid down, they cannot always be rigidly followed, and much must be left to the judgment of the observing physician.

It may be observed here that most foreign assurance offices have only one class of lives, and either accept at a tabular rate—*i.e.*, a rate for age—or reject altogether. But in England it is becoming more and more the custom with the best offices to accept lives which require a money addition to the rate.

The adjustment of such extra payment is strictly outside the province of the medical adviser, but he is in all cases of the kind asked to consider by how much the life is likely to be shortened by the adverse circumstances existing. A very ordinary method is to add a certain number of years to the life—*e.g.*, to make a man of 30 pay the rate of 40 years of age. This can, of course, be only an approximation to the true value, and at the best it is only one out of several ways of securing the company against loss by an invalid life, or by one hereditarily disposed to disease.

There are diseases to which the liability occurs in early life—as phthisis—and where it passes away after middle life so that its possibility need no longer be reckoned as an adverse influence. These may be called "diminishing risks."

Again, there are others, like gout, and disorders causing degeneration of the muscular structure of heart and arteries, which only threaten life after middle age, and such may be called "increasing risks."

It is obvious that any true system of life assurance would deal with these two classes by lessening the premium exacted in the first, and increasing it in the latter, as age advanced. We have endeavoured to indicate the considerations which should guide us in dealing with such cases.

It is obvious also that every life, invalid or healthy, might have a price assigned at which it might be profitably assured, especially if sufficient numbers of a like kind presented themselves to form an average, but in the present limited state of our knowledge it would not be possible to value such with precision.

The adjustment of the premium to be paid is, however, in no sense the province of the physician, but is exclusively that of the actuary. It is true that he will be consulted on the matter, and his advice will become the basis of action, but the *method* and amount of increased payment are outside his sphere.

It is right, however, and necessary, that he should know and consider such methods, for a mere addition to the age will not suit the interests of assurers in all cases where what is called "rating up" is demanded by the health or antecedents of the proposer.

It is advisable that while he should be acquainted

with such possible methods of meeting doubtful cases, the physician should in all instances be guided by the actuary to the company, and it is here that their united action becomes of the highest value.

Having thus indicated the scope of this work, we shall proceed to consider in detail the duties of the medical adviser, and the most recent information which should guide him in their performance.

In the later chapters will be found a description of the various modes of life assurance, of the modes of payment, and the different methods of imposing extra charges.

# MEDICAL HANDBOOK

OF

# LIFE ASSURANCE.

## CHAPTER I.

### NATURE OF LIFE ASSURANCE.

1. Life assurance, pure and simple, is a contract of indemnity. The amount of the indemnity to be paid on death is fixed by each individual according to his means or wishes, and the company engages to pay the indemnity when life fails, in consideration of an annual payment or premium so long as the contract lasts.

2. Irrespective altogether of health, the risk undertaken by the company is greater or less according to the variation in two factors:

(1) The age of the life to be assured;
(2) The duration of the term of assurance.

The premium required for an assurance on a life age 40 is greater than that for a life age 20; and, again, the premium for an assurance over the years of life from 40 to 60 is greater than that for an assurance from age 40 to age 50 only.

3. It will be simpler to consider in the first place

only those assurances that vary with the first factor, and to suppose that the term in all cases consists of the whole duration of life. As the greater includes the less, a life that is assurable for the whole term of life is *a fortiori* assurable for any shorter term. The many varieties of the Assurance Contract, and the different kinds of payment of premium that are in vogue, will be dealt with further on (Chapters 16 and 17).

4. As the premium is calculated on the assumption that the proposer has a *chance* of surviving to the extreme limit of life, it is obvious that the company ought to assure at the ordinary rate of premium such lives only as have the best chances of attaining to old age; or, as they are called in technical language, first-class lives.

5. Hence lives coming under any of the following categories must be discarded from the first-class standard:—

(1) Lives not possessed of sufficient vital stamina to afford them the *possibility* of attaining old age.

This will include lives which have shown traces of fatal maladies which will develop themselves later on in life, such as gout, rheumatism, &c.

(2) Lives whose family history discloses a tendency to a breaking-down age short of longevity.

(3) Lives whose business or occupation has a more than usual wearing effect on life or involve peculiar hazards.

6. There are perhaps few among those who present themselves for examination who come up to the requisite standard, and it is necessary in practice to make certain recognised exceptions—*e.g.*, the occurrence of one or even two cases of consumption in the family, if at an age considerably younger than that of the applicant will not exclude from the first-class standard if the occupation and *personal* history of the applicant be specially favourable; again, the presence of a simple hernia will not exclude if a well-fitting truss be worn and all *other* circumstances be favourable.

7. Generally, lives which fall short of the highest standard in respect of one out of the three conditions set down in Paragraph 5 may often be admitted to the rank of first-class, but if they fail of the highest level in more than one condition they must be excluded.

8. In all cases the medical examiner should set before himself the exclusion of the three conditions in Paragraph 5 as *the ideal* which should be reached. It is not sufficient for him to consider that a life is likely to reach, say, age 70; the company suffers a heavy loss in many cases when death occurs before that age, and the profit from survivors is necessary to compensate for the loss from earlier deaths. The Table of Mortality now assumed by nearly all Life Assurance Companies as the basis of their calculations, is that known as the H.M. Institute of Actuaries Table (*see* Paragraph 363), according to which the last surviving life assured dies after

attaining the age of 98. It follows, therefore, that all who are assured as first-class lives should have before them as an individual life prospect the *possibility* of attaining to that age. Some modification of this rule may, however, be allowed in the case of young lives, say up to age 30, for the reasons stated at the close of Paragraph 11.

9. In estimating the value of a particular life before him, the Medical Examiner should always ask himself this question: "What is the outside number of years that should be allowed to the individual before me as the *limit* of his life?" And the more nearly that it is possible to make a reasonable estimate, the easier will it be to determine the fair amount of premium that should be charged.

10. Such estimates can only be formed when there is a probability, in the individual case, of the forces destructive to life following the usual rule, and increasing as age increases. But when the particular life under examination is exposed to a *diminishing* mortality risk as age increases, as, for instance, when each year survived lessens the chances of inheritance of a family taint of consumption, it is useless to form any estimates as to the future until at least middle life has been reached. A good practical rule that may be followed, when the age is not over 40, in rating consumptive family history cases which do not present very special features, is to add 10s. per cent. to the annual premium. This will be found to correspond to an increasing number of years' addition to the age, as the danger of future inherit-

ance of disease becomes enlarged in going back to younger ages. The assessment of a money equivalent to meet an extra risk was the method pursued by the older school of actuaries, and is in many respects superior to the modern practice of making an addition to the age. (See also Paragraphs 386-399.) So when the additional mortality risk is practically constant at all ages, as in the case of a hazardous occupation, or the existence of a hernia, the medical examiner's estimate of the future should be formed on the basis of excluding these special risks, and he should state this in his report, leaving it open to the Company to make such further addition to the premium, if any, as experience warrants.

11. In any event it has to be borne in mind that estimates of the possible limit of life in individual cases are increasingly difficult to form as the range of future estimate becomes extended. Thus, while a medical examiner may be able to conclude with a fair approach to accuracy that a particular life, now aged 25 will not probably, owing to inherent defects of constitution, reach the age of 45 or 50, it becomes impossible to decide, when the life is almost first-class, where the possible limit of life should be fixed. The range of vision is too extended. Fortunately it is of less importance to differentiate *in the case of young lives* whose prospects are so good as to carry them pretty safely up to age 75, because if we knew that their lives would be cut short absolutely at that age the additional premium to be paid would have been very trifling. (*See* Table on p. 18)

12. The rôle of the Medical Examiner, as distinguished from that of the Chief Medical Officer or Adviser of the company, consists in reporting the facts, but not in summing up the results and giving a final opinion.

In cases where the life reaches or nearly approaches the highest standard, the opinion of the Medical *Examiner* will, no doubt, in most cases be adopted. But whenever there is a depreciation of the life the Examiner should refrain from expressing any opinion, and make use of his skilled knowledge as an expert to define as clearly as possible, for the information of the Medical Adviser, the precise features in the case that indicate a blemish on the life.

13. The amount of deterioration in a life is and must remain a matter of opinion, but its assessment is a special department of medical practice, and it should be left to the Medical Adviser in conjunction with the Actuary to estimate the amount of depreciation and to fix its money equivalent.

14. The Table of Extra Premiums on p. 18 has been drawn up to assist Medical Officers of Companies in advising the additional premium, if any, that should be charged in the case of an under-average life when the risks are such as increase wth age. (*See* Paragraph 10.) It is not intended that the extras given in the table should be followed exactly, because any such approach to exactitude in the assessment of a deteriorated life would be both childish and futile. But it is hoped that the extras indicated may be

sufficient guide to Medical Advisers to enable them to place the lives in one of several broad classes, which should be respectively subject to extra premiums of 5s., 10s., 15s., or £1, &c. When the extra premium exceeds 30s., the circumstances are likely to be so far removed from those of an ordinary character as to require special consideration, and the application probably of some other mode of assessment. (*See* Paragraphs 382, 383, 403, and 405.)

15. A table of what is technically called "Expectations of Life" is sometimes put before Medical Examiners. Those who are not familiar with actuarial science are apt to think that such a table indicates the number of years that a person of the specified age may "reasonably expect" to live. But this is not by any means the case. The term "Expectation" is an unfortunate one, and the function might have been better named the "average after-lifetime." It indicates the average number of years which is lived by all persons of a common age from that age up to the extremity of life, and has no relation whatever to the most probable lifetime of any given individual. Medical Examiners should, therefore, guard themselves against forming the opinion that a proposer who is likely to reach his "Expectation" is entitled to rank as a first-class life.

## TABLE OF EXTRA PREMIUMS.

*Referred to in Paragraph* 14.

| Age at Entry. | Extra Premium to be charged when Medical Estimate places the Outside *Limit* of Age to which Proposer may possibly live at— | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Age 75. | | | Age 70. | | | Age 65. | | | Age 60. | | | Age 55. | | | Age 50. | | |
| | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. |
| 20 | 1 | 1 | | | 2 | 7 | | 5 | 0 | | 8 | 7 | | 13 | 11 | 1 | 1 | 11 |
| 22 | 1 | 2 | | | 2 | 9 | | 5 | 5 | | 9 | 6 | | 15 | 8 | 1 | 4 | 10 |
| 24 | 1 | 5 | | | 3 | 2 | | 6 | 1 | | 10 | 8 | | 17 | 10 | 1 | 8 | 8 |
| 26 | 1 | 6 | | | 3 | 6 | | 6 | 11 | | 12 | 1 | 1 | 0 | 6 | 1 | 13 | 2 |
| 28 | 1 | 10 | | | 4 | 0 | | 7 | 10 | | 13 | 10 | 1 | 3 | 6 | 1 | 18 | 8 |
| 30 | 2 | 0 | | | 4 | 7 | | 8 | 11 | | 15 | 11 | 1 | 7 | 4 | 2 | 5 | 7 |
| 32 | 2 | 3 | | | 5 | 2 | | 10 | 3 | | 18 | 6 | 1 | 12 | 0 | | | |
| 34 | 2 | 8 | | | 6 | 0 | | 11 | 10 | 1 | 1 | 7 | 1 | 17 | 8 | | | |
| 36 | 3 | 1 | | | 6 | 11 | | 13 | 9 | 1 | 5 | 4 | | | | | | |
| 38 | 3 | 6 | | | 8 | 1 | | 16 | 1 | 1 | 9 | 11 | | | | | | |
| 40 | 4 | 1 | | | 9 | 5 | | 19 | 0 | 1 | 15 | 10 | | | | | | |
| 41 | 4 | 5 | | | 10 | 2 | 1 | 0 | 8 | | | | | | | | | |
| 42 | 4 | 9 | | | 11 | 1 | 1 | 2 | 7 | | | | | | | | | |
| 43 | 5 | 2 | | | 12 | 2 | 1 | 4 | 10 | | | | | | | | | |
| 44 | 5 | 8 | | | 13 | 3 | 1 | 7 | 3 | | | | | | | | | |
| 45 | 6 | 2 | | | 14 | 5 | 1 | 10 | 0 | | | | | | | | | |
| 46 | 6 | 9 | | | 15 | 10 | | | | | | | | | | | | |
| 47 | 7 | 4 | | | 17 | 5 | | | | | | | | | | | | |
| 48 | 8 | 0 | | | 19 | 2 | | | | | | | | | | | | |
| 49 | 8 | 9 | | 1 | 1 | 2 | | | | | | | | | | | | |
| 50 | 9 | 9 | | 1 | 3 | 7 | | | | | | | | | | | | |
| 51 | 10 | 9 | | | | | | | | | | | | | | | | |
| 52 | 11 | 11 | | | | | | | | | | | | | | | | |
| 53 | 13 | 4 | | | | | | | | | | | | | | | | |
| 54 | 15 | 0 | | | | | | | | | | | | | | | | |
| 55 | 16 | 9 | | | | | | | | | | | | | | | | |

## CHAPTER II.

### DUTIES OF CHIEF MEDICAL ADVISER.

16. Every Assurance Company has two classes of Medical Advisers. First, the ordinary Examiner, who may reside in town or country, and be called on at any time to examine a proposer. These gentlemen are generally selected previously by the Office, and are commonly appointed for their local repute as good and careful practitioners, as also from the fact that they hold an appointment as physician or surgeon to a hospital if they reside in a large town. The purely country practitioner is, however, often called on to act as Examiner.

17. The other is the Chief Medical Adviser to the Company, who not only has to examine such cases as present themselves at the Chief Office, but also to criticise and compare all reports from the country or elsewhere, and advise the Board as to their eligibility or otherwise, and also as to the terms on which they may be accepted. In this latter duty he is assisted by the Actuary, especially as to the mode in which extra payments are to be adjusted. In his personal examination he will act to the best of his knowledge and ability, exactly in the same manner as the country Medical Referee.

18. In reviewing reports from the country and abroad he has, however, a wider range of duty, inasmuch as this involves a review and criticism on all life proposals submitted to him.

Such medical statements may be *imperfect*, by the omission of important information as to the health, habits, and family history of proposer. The imperfection may have arisen from the haste in which the examination was made, or very commonly from an erroneous opinion that details of a certain kind were not necessary. Thus, the urine may not have been chemically examined, his former illnesses not asked for, and his family history only given in part. These, and omissions about the relation of weight to height, are of very common occurrence. Such reports should be referred back by the Chief Medical Adviser.

19. The report may be *erroneous*, as assigning a wrong meaning or value to certain physical conditions—such as placing the subject of a mitral murmur in the first-class table, or proposing the acceptance of individuals with sugar or albumen in the urine, without addition to the premium. Of such mistakes we have known several examples.

Again, the report may be erroneous by not recognising certain physical conditions then existing, as crepitant sounds in the lung, or—as we have witnessed in one instance—omitting to notice cancer of the tongue which had a fatal termination a few weeks later.

It is thus the duty of the Chief Medical Adviser to correct and supplement as far as possible erroneous or imperfect medical evidence submitted to him.

20. In forming his opinion he will, of course, be guided by his clinical acquaintance with disease and its results, and as the *time element* is so important in

Life Assurance, he can draw on his hospital experience for facts illustrating the duration of various affections of the chronic class. It is of great importance also that he should be a good auscultator.

21. In giving his opinion on a submitted case it is advisable that he should speak with precision and authority. After weighing well all the evidence, his decision should be written and adhered to. It is recommended not to go back from this unless fresh evidence can be adduced.

22. The representation of the agent regarding the local importance of the case, or the further business which it is likely to lead to if accepted, as well as the fact of his belief that the proposer is "a first-class life," should be disregarded. But the agent is often most useful in obtaining information as to the habits of a proposer and his moral character, as also concerning the repute in which the Medical Examiner is held in his own neighbourhood.

23. The amount to be assured should be immaterial to the physician, but the mode in which it is to be guaranteed is frequently of importance. Thus, the differences between a whole life policy, or a sum guaranteed for a fixed term of years, or an endowment payable at a certain age, become medical questions involving considerations of the probable duration of the life of the proposer for such periods.

24. Again, as will be pointed out further on, certain diseases of the heritable form have their incidence ordinarily at periods of life which have been ascertained—thus, phthisis in early life and gout

in later life—and here the term of guarantee becomes a medical consideration of importance. On all these points he will be greatly assisted by the Actuary, who may vary the scale of charges to suit various classes of assurers, and whose conclusions on a case, while including the medical opinion expressed, will often embrace other considerations not strictly within medical rules.

25. Finally, the Chief Medical Adviser will occasionally be called on to express his opinion on the eligibility of a life from a summary of facts presented to him, on the details of which he cannot be guided by strict medical rules, and in which his whole tact and general knowledge of men, and the social habits of life, will have to be exercised.

General delicacy—modified it may be by careful or careless modes of living; incidents of social life which have disordered vital power; complicated heredity to disorders which shorten life, and habits which tend to precipitate or ward off such ailments; a family history showing longevity or the reverse; the occurrence of slight ailments which separately are of little moment, but concurrently lower the system: such are some of the problems often placed before the physician, who is expected to be not only "faithful, but far-seeing." Boards of Directors themselves, often puzzled by such cases, are apt to refer them to their Physician and abide by his fiat, and no doubt a man of experience will often be able to advise with effect.

26. The money equivalent of any risk should

always be finally fixed by the Actuary, who alone can advise on the point, and not by the doctor.

Unity of action between the Actuary and the Chief Medical Adviser is of great importance. In old times no general medical examination was performed, and no family history was investigated, but it has been abundantly demonstrated that offices have been saved from heavy losses by our modern method of strict examination into the proposer's health and that of his family.

27. Again, at a later time, only certain cases were submitted to the Medical Adviser, but the fallacy of such practice became evident, for by what means are Directors to distinguish the important from unimportant facts about a life?

28. Forecasts imply the highest knowledge and the highest intellectual ability. The exercise of this power is undoubtedly limited to a few. We doubt if the ordinary mind—even the ordinary medical mind—has it at all. It is a faculty resulting from the union of several rare intellectual gifts—power of observation, memory, and the capacity for estimating differences—which culture alone cannot bestow, although it may improve.

The power of generalising with accuracy from many observations is a very rare faculty. All careful students can learn to collect facts, but their application is perceptible only to the few. The materials at our disposal from accumulated medical observations are enormous. They are often contradictory, and their bearing is frequently obscure, and the

difficulty of forming a concrete opinion from their analysis is very great. To some, however, this power is given more than to others, and while we acknowledge the incompleteness of our art, enough progress has been made in its applications to practice to justify us in hoping for still higher proficiency.

## CHAPTER III.

### DUTIES OF THE MEDICAL EXAMINER.

29. The printed document forwarded by the Office should be read aloud by the medical man, and every question should be answered. Some forms are too voluminous and complex, but as the Office requires the information demanded, every question should be answered, even although it may appear to be frivolous or unnecessary.

30. The Medical Examiner is for the time being the retained Adviser of the Office, and he should not allow himself to be swayed by motives of personal friendship, or because he has been, or is still, the ordinary attendant of the proposer, or his "family doctor." It is advisable, in the interests both of the Office and the medical man, that their Examiner should not be the customary medical attendant of the proposer.

It is obvious that, especially in smaller country places where there may be only one resident medical man, a certain degree of private intimacy is likely to exist between the doctor and his patients, which may render the former unwilling to give an adverse opinion on Life Assurance questions if the proposer be his personal friend or client. He may thus be induced to make light of his ailments, or even to conceal facts which may be of vital importance to the Assurance contract. And although he may make such revelations about his patient and friend as entirely

confidential to the company, and while such confidence may be strictly observed on their part, the fact will remain that the proposal has not been accepted, or that an addition to the premium has been demanded, and this may lead to unpleasant misunderstandings between patient and practitioner. The employment of the medical attendant of a proposer as reporter for the office is therefore not to be advised.

31. It is often necessary, however, to seek the opinion of such personal medical attendant, and a special fee is given for this purpose. If such be accepted, he is bound to act impartially for the office which retains him, and not to withhold any information regarding the health, habits, or family history of the life proposing.

Any medical man may decline to act for a company, but having accepted a fee he is bound to consider their interests as of primary importance, and his relations with his patient as secondary.

In France the rule is different, as the medical attendant is liable to legal penalties if he violate the confidence reposed in him by a patient, and for this reason we often find it difficult to obtain the necessary medical opinion regarding a life proposed for Assurance in that country.

Every examiner of a proposer should be aware that his report and opinion are necessarily submitted to the physician of the company before reaching the Board. By remembering this fact, a greater accuracy in the use of medical terms will often be observed.

32. The medical adviser of the company will have an interview, always private, with the proposer, who should not be accompanied by any one. The wife will generally ask that her husband or friend shall be present, but this is not advisable. Persons of either sex are always more frank and confidential when alone with their doctor. There may, indeed, be ailments to be kept secret even from a wife or husband, or former events in life bearing on health which would not be revealed in the presence of a third person. The rule of a private interview should therefore be imperative, and in insisting on it the examiner can always plead the directions of the company which employs him.

33. At the same time, the utmost courtesy and quietness of manner should be observed, and the proposer should be placed at his ease as far as possible, and not be led to regard the examination as anything formidable. A deterrent manner not only excites apprehensions, but may give rise to prevarications or concealment on the part of the proposer. In a word the *fortiter in re* must be covered by the *suaviter in modo*. We have heard of offices where the "doctor" sits in an upper-floor room, and the proposer is requested to run up-stairs to him, in order that he may arrive breathless and palpitating, and have his heart examined while in that state! Nothing can be more ill-judged. What we desire is to see the proposer in a natural state, uninfluenced by nervous excitement. The heart is not the first but among the last organs to be examined; and should it be desired to test its

excitability, or to develop a latent murmur, we can always ask our client to walk rapidly up and down, or change his posture, but this only after we have put him at his ease for some time. A tendency to conceal is undoubtedly a natural result of disliking the examiner for his abruptness, harshness of manner, or inquisitorial method of questioning. An inquiry into the functions of the body is often resented when abruptly put, but we have never failed to obtain all desired information by a quiet questioning in courteous language. We are in favour, however, of direct questions, plainly spoken out, especially with women, but *many* questions of the kind are to be avoided. The good faith of the proposer should always be taken for granted, and even when there are doubts as regards temperance of habits, or the cause of death of a relative, they will be best solved by returning to the subject towards the end of the interview, when judicious questions in a conversational manner will generally elicit the facts, or at least show the necessity for further collateral evidence on the points in doubt. Regarding temperance, it is generally useless to put the question directly to the proposer. His estimate of what constitutes excess may not be yours. His opinion of his own moderation may be comparative as regards his neighbour; he may be a dram drinker (the worst form of excess) but "never get drunk." It will be well to approach the subject with inquiry as to his hours, occupation, habits, neighbourhood, and society, and thus elicit both his favourite drink and how often it is taken. By engaging your

subject in a conversation rather than in a cross-examination, you will both gain his confidence and elicit truthfulness of reply.

34. The examiner will also allow for nervousness, even in strong men. A rapid action of the heart is most commonly accounted for in this way, and it will need a second examination, and often a second interview, to get at the truth.

Again, some persons inflate the chest when asked to breathe, and hold it full, or use only the most shallow respiration even for many minutes. In such cases no breath sounds are heard at all! We have had to adopt the expedient of making the proposer laugh before this tension of the respiratory muscles was exhausted, but a sneeze from snuff or ammonia might answer the same purpose.

To return to our interview.

35. The proposer being placed in a good light (with his face towards a window), the examiner will notice his general build, formation of chest, corpulence or otherwise, and such evidence of activity of gait as is shown by most people even on entering a room. Any deformity should be examined, and former accidents inquired for.

36. The face and hands will especially occupy us.

The face will indicate intemperance, sensual habits, temper, and self-command, or nervous excitability of character.

A clear healthy colour of skin is most important. The face should be neither pale nor flushed. It should be free from blotches, and the nose not unduly

red. The drunkard's nose, protuberant, granulated, and rosy at the end, is often associated with a blear-eyed expression of the eyelids. There are some forms of skin affection which simulate it, but the practised eye will discriminate the chronic effects of alcohol, which, by impairing the elasticity of the capillaries has given rise to the nose we mean.

37. A flushed state of the malæ with prominence may lead us to suspect phthisis.

A redness of the cheeks, composed of permanently dilated blood-vessels, together with a velvety integument, exuding sebaceous matters, always caused Brinton to suspect kidney disease.

38. The tongue should be examined, not only as regards its being furred, fissured, moist, or dry, but also for ulcers or growths, which should always be examined by pressure of the fingers.

39. The throat should always be looked at, for evidence of present or old syphilitic ulceration.

The gums may present the blue line due to lead poisoning, or a dark red line showing that phthisis may be present.

The teeth may be deficient or carious, and their condition is always a good test of general health.

The notched teeth of inherited syphilis are very characteristic, and should always be looked for.

40. The hand affords evidence of health or disease in several ways, and the examiner should always take the proposer's hand, spread out, and examine its form, colour, and nails. The clubbed fingers and incurvated nails of chronic phthisis, or of

old pleuritic or pericardial disease, would afford much valuable information.

41. Women should be treated with gentleness and courtesy, but the medical questions should be asked plainly and without disguise. We have never met with any who, if so addressed, found it difficult to answer about any of the bodily functions.

In examining the chest it is absolutely necessary that the dress should be removed from the front, but it is by no means required to uncover much of the chest at a time. For this purpose a shawl may be thrown over the shoulders, and shifted so as to display only the part to be examined. In cases where there is doubt as to the heart sounds, it may be necessary to ask the proposer to open or remove the stays. Inquiries should be made about the uterine and urinary functions, but it is not commonly possible to obtain the urine for analysis. Where such is absolutely required, the family medical attendant should be applied to.

42. The manner of a proposer should be noted, as also any reserve which he may exhibit on certain points about his health, habits, or history. It often happens that when all ordinary questions have been answered favourably, some former event in his health, as hæmoptysis, will be elicited, either by the proposer voluntarily stating it at the close of an examination, beginning with "Perhaps I ought to have mentioned that——," or by the skilled tact of the examiner.

43. The gait, nervousness of manner, twitching of muscles, inability to walk straight, peculiarities of the eyeballs and facial muscles, will betray occasionally

some deep-seated affection of the nerve centres. Tremblings or shakiness of handwriting may indicate alcoholism or abuse of smoking or tea.

Finally the whole aspect of a man should be noted as conveying that he is robust, hearty, and vigorous, well developed in muscle of chest and limbs, or puny and weak, with loose tissues and flabby muscles. Impressions as to the whole state of the system are formed by all of us at our very first meeting with any one, and if they can be faithfully transmitted to us by the examiner, will be found full of meaning to the Chief Physician and his Board.

44. The duties of the ordinary Medical Examiner are to ascertain with precision—

(1) The family history of proposer.
(2) His past history.
(3) His present state of health.
(4) His habits.

45. *The family history* is to include not only his parents and grandparents, but the health and ages at death both of them and their descendants collateral to proposer—that is, of uncles, aunts, and first cousins. Inquiry should be especially made as to the occurrence of diseases known to be hereditary—as consumption, rheumatism, and cancer—if in more than one member of the family. Thus, if proposer's mother have had cancer, or if proposer himself have had rheumatic fever, it is more than probable that some near relative will have had the same. The exact bearing of this may not be evident to the examiner,

but the facts should be included in the report to the Head Office.

46. *Resemblance* to parents who have been the subjects of special disease, as consumption, is evidence of a helpful kind in doubtful cases, but it is not always reliable. If a man resemble a consumptive mother who may have been of fair skin, small chest, and fragile build, rather than a father who is dark, broad-chested, and muscular, the fact may assist us to a decision along with other evidence. In the chapter on heredity we have entered into details as to the modes of transmission of certain diseases; and that a proclivity to such exists in families is undeniable.

47. *The past history* of a proposer will occupy us with much care. He is bound to tell us whether he has had any serious ailment at any time of his life; but as memory is fallacious, and the tendency is at least to ignore the importance of illnesses which he has undergone, direct questions which are found in every form of medical report issued by the offices are to be put. It will be convenient therefore to ask in detail whether the proposer has had symptoms of diseases affecting the chest, head, and abdomen, or any disorder of a general kind, such as fevers; and men should be plainly asked about syphilis. The bearing of the different affections on the value of life is treated of further on.

48. Residence in hot climates should be asked about. India and tropical climates have their peculiar disorders, and districts of the malarious kind will

often leave a tendency to intermittent returns of disease acquired there.

49. Inquiry should be made whether proposer has had any medical attendant, and if so for what disorders he has had advice, and the dates should be given, and the length of time of sickness should be asked. A reference can then be made if necessary to such attendant by the Office.

50. *The present state of health* is then to be ascertained, and a careful examination made of chest and abdomen. We cannot insist too strongly on the necessity for stripping the chest. Without this percussion cannot be practised, the expansion and movements will remain unnoticed, and alterations in the walls caused by congenital malformation, or by former disease, as pleurisy and phthisis, must escape notice. The heart sounds cannot be estimated through the dress, and in a long experience we have known many instances where morbid conditions were overlooked because proposer was so examined. We have met with remonstrances from provincial practitioners, and from others who should know better, as to the necessity for examining *next the skin*, and have known agents assure the London Secretary that proposers were deterred by a knowledge that such a method of examination was required, but all such should be disregarded. There are heart murmurs and lung sounds which can be simulated or disguised by a well-starched shirt, and the interests alike of the proposer and of the company require that no such mistakes should be possible.

51. For the examination of *the abdomen* the waistband should be unloosed and palpation and percussion practised, by which the existence of liver or spleen enlargement and of tumours may be ascertained. In doubtful cases the reclining posture should be adopted.

52. Having satisfied ourselves of the state of the different organs, it is well to make an estimate of the general appearance, build, complexion, and presence or absence of vigour, the development of the muscular system, and general carriage of proposer, which should be briefly expressed in words.

53. By *the habits* of proposer we understand his general mode of living, whether in town or country, and his opportunities for exercise; if in the latter, as hunting, cricket, and other athletic pursuits. The hours of his meals should be asked, and we can thus approach the question of temperance. Direct questionings on this point, as "Are you temperate?" are little likely to be answered from the point of view of the examiner, and the measure of the wine or spirits which may be taken short of excess will vary with the opinion of the answerer as to what moderation or excess means. We advise that the quantity of stimulants taken should be written down from the reply of proposer in the document which he has to sign.

54. Men of business residing in cities should be asked as to their mode of passing the evening, whether in the light pursuits of leisure, or if the business of the day is resumed at night. And so of students, the

clergy, literary men, and others who burn the midnight oil, and waste their nerve power.

55. *The testimony of friends* is always asked as to the habits of a proposer, but as a rule the printed form sent to them elicits only a "Yes" or "No" to the various questions. We could also enumerate many different replies which have been so obtained in answer to the questions, "Is he temperate?" "Has he always been so?" To the first some will answer, "Fairly so," or "I never knew him drunk," or "As long as I have known him," or "He has lately been more careful." It is scarcely within the province of a Medical Adviser to decide on the value of such reports. They belong rather to a class of evidence which should be decided on by the Board, who are fully as competent as the Medical Adviser to decide on their truthfulness or value. We need not, therefore, dwell on them further than to say that in every important proposal—important, we mean, as to amount—a written statement as to the friend's estimate of the habits should be obtained in the form of a letter, and not on a printed form. We should thus be able to gather from the general tone of the reply a tolerably fair view of the writer's opinion as to the habits of his friend.

## CHAPTER IV.

### AGE.

56. Some general considerations about age are worthy of note.

Different ages predispose to particular diseases. One-tenth of all children die in the first month. Strumous diseases affecting the mesenteric and lymphatic glands are early developed.

The so-called "diseases of childhood"—measles, whooping-cough, chicken-pox, and scarlatina—cause a great mortality. It is favourable for assurance purposes that a proposer should have safely passed through them, but the possible sequelæ, as albuminuria, should always be looked for.

Respiratory diseases prevail most from puberty to 25.

57. The best risks are from 25 to 35 years of age. Heredity at this period has been generally out-grown and external agencies are best resisted.

58. Phthisis, hereditary or acquired, may, however, be developed. It has been reckoned that at 40 half the danger from this disease is over, and three-fourths at 50 years of age, and the rule seems a fair one.

59. An heredity to the development of phthisis at a somewhat advanced age (say after 40) may exist, and prove an actual danger to the life, as when one parent has died of the disease at such age.

60. A certain decline of vital powers may be expected at from 40 to 45.

61. The liability to certain diseases, as gout, apoplexy, degenerations of organs, and urinary affections, increases after 40. Sydenham says that "chronic diseases proceed from ourselves," and it is at and after middle life that the temptation to excess in diet and stimulants, with a diminished desire for exercise, leads the way to slow organic alterations.

62. Persons who attain to great age are generally spare, and have in almost all instances been frugal in their habits, and active in mind and body. The decay of muscle and of organs is precipitated by want of use, and the due exercise of all faculties of mind and body is conducive to longevity.

63. Many offices require the examiner to compare the apparent with the actual age of the proposer. The rule is a good one, for some are really older at forty than others at sixty.

*Premature old age* may arise from hereditary or congenital weakness of structure, or it may be the evidence of previous illness, of long-continued ill-health, irregular or dissipated habits, overwork, or exposure to influences lowering vital powers. As a general rule, when the proposer is really older than he looks, his expectation of life surpasses the average; but when he has aged beyond his years the risk is thereby so far impaired.

## CHAPTER V.

### CONDITIONS OF LIFE AND OCCUPATIONS.

64. The conditions of life which most tend to longevity are those in which necessary comforts are already provided, and when the struggle for a sufficient provision of means has become no longer necessary. A fair success has been attained, the profession or calling has been sufficiently productive both to satisfy the moderate requirements of existence, and the mental satisfaction of success. There is, therefore, a freedom from anxiety and worry, and the necessity for toil and speculation has greatly diminished, if not ceased. This is the typical state, although it is not often reached, for men continue to labour and struggle for successes and gains long after the moderate requirements of a healthy life have been reached.

*Mental idleness*, or a sitting down to enjoy the mere ease of circumstances which previous exertion has won, is by no means conducive to health or longevity. The merchant, or lawyer, or doctor, who retires after middle age to lead a life of quiet—that is, of idleness—in the country, finds himself *ennuyé* and miserable, and soon becomes the prey of many minor maladies, until his dyspepsia has become developed into gout; and he discovers that his love of ease has made him sacrifice the high enjoyment of work and the thrilling pleasure of success for a heartless living of life for the sake of its surroundings.

65. Our typical man of middle age is of course

married, and probably has children. Married men are usually the most desirable risks. Married females are also better lives than single women, and especially in Great Britain, generally in middle life, and under favourable circumstances, develop a blooming state of health.

66. The life which is protected from the vicissitudes of fortune by a fair provision for daily wants, which has occupation for both mind and body without undue strain or the necessity for hurry, and which has daily exercise in open air combined with a moderate amount of sedentary work, is undoubtedly the best risk.

We find, therefore, that professional men who are not overworked, and who can live, partly at least, in the country, rank highest in the assurance list.

67. *The Clergy* are perhaps the best lives of all callings. Their habits are generally moderate, and if they live in the country a certain amount of exercise is imperative. Having fixed incomes, they can easily live within their means, and they are, while living in the best society, not expected to give extravagant entertainments nor indulge in the expensive amusements of their neighbours. Nor are their daughters supposed to enter on the rivalry of costly dress, and if they live even half-way up to the doctrines they preach, they have the blessed satisfaction of doing good, and being trusted and respected accordingly.

The statistics of the Clergy Offices bear out this statement. Their ailments are generally of the dyspeptic class, and it is well known, though not

always believed, that "clergyman's throat" does not lead to consumption.

*Teachers, Heads of Schools, Lawyers, and Physicians,* come next.

68. That comprehensive expression "business," which includes the merchant, stockbroker, manufacturer, banker, director of companies, &c., and forms, in fact, with those previously mentioned, the bulk of assurance proposers, is a fairly healthy class, and stands first on the list. The careful examiner will, however, do well to remember the anxieties incident to all these careers. A weak heart or an overburdened brain readily reflects the undue pressure of business, which in these later days arises from great competition and a multiplicity of engagements. The temptation to have recourse to stimulants is also one of the dangers, and perhaps not the least, to which they are exposed. It is among this class that all the tact and medical skill, and knowledge of social life, and of the innermost workings of human nature, will be required by the examiner.

69. There are certain classes exposed to manifest dangers, for which special rates are demanded by all Assurance Offices. Thus, the publican is charged £1 per cent. extra for occupation, a sum which appears to us to be scarcely sufficient, for the temptation to intemperance in its worst form—dram drinking frequently repeated—is very great; and regarding them it should be remembered that, although while young they may be moderate in habits, it is very common to find them yielding in middle age to the often-repeated temptation.

70. For the *Mariner*, exposed to the dangers of the sea, there is, of course, a special rate, and naval officers belong to this category.

71. In time of *war* there are special rates for both army and navy.

72. There is a large class of *Artisans* and *Trades-people*, and persons engaged in manufactories, who do not often present themselves as candidates for assurance of life. Each of these must be separately treated, and it is not necessary for us to do more than indicate certain of the more marked influences on health which we are bound to consider in relation to occupation.

73. *Dust.*—The miller, the dry-stone cutter, the grinder, the collier, the worker in potteries, and others who live in workshops where dust abounds on the floors and in the air, are subject to special forms of pulmonary disease, which must exclude them from life assurance.

74. The workers with lead—plumbers, and house painters—are subject to paralysis of various forms, and albuminuria, and of course cannot be accepted. The blue line on the gums should be looked for in all such cases.

75. Many trades are also notoriously unhealthy, their workers being exposed to the fumes of acids, phosphorus, and other chemicals.

Dangerous occupations come scarcely within the province of the physician, but are sure to meet the scrutiny of the managers of offices.

76. The confined occupations, where there is but slight opportunity for exercise in the open air, will

not fail to attract attention, if only from the pale and anæmic condition of the proposer.

The late hours of *Printers* for the daily press, and the artificial hours and lives of actors and reporters, will, in many cases decide against the acceptance of a risk, but the personal health of the proposer will largely influence the decision of the examiner.

77. *Butchers.*— The mortality in this class is very high, and, according to Dr. W. Ogle's Report to the Registrar-General, 1885, is manifestly due to excessive indulgence. Their mortality from alcoholism, liver diseases, and urinary diseases, and from disorders of the nervous system, is almost identically the same as that of brewers. It was for a long time doubted whether they had not a certain immunity from phthisis, but this opinion has been disproved.*

78. In all old countries there is an *unoccupied class* of young men, with sufficient means for the pleasures of life, and no necessity for work in professions. They are commonly in possession of hereditary property, and are known as men about town. There is no doubt that, like others, they have their peculiar vices, which are such as are engendered by the want of occupation, and the temptation afforded by sufficient means to indulge in dissipation and excess. They are very commonly before assurance offices for loans as racing, betting, and over-costly establishments have exceeded their means. The various agents which exhaust vital power—as intemperance,

* See Appendix, "*Comparative Mortality Table in Different Industries*," and *Paragraph* 413.

syphilis, anxiety, and over-indulgence—will have to be investigated in such cases with peculiar care. We have to suggest that the ordinary printed form for friends and medical attendants' reports be always supplemented by a written opinion as to the facts to be ascertained. We shall thus alone attain to an accurate understanding of the intimate habits and surroundings of such a life.

79. It by no means follows, however, that noblemen and others with hereditary property are mere idlers on the surface of society. The management of landed property is itself an occupation demanding high intellectual powers and applied habits of business, and we have only pointed out the errors incident to the position. In perhaps the large majority of instances it will be found that this class are men of active bodily and intellectual habits, engaging in the political and social business of the country, often occupied in extensive travelling and in literary pursuits, and in all respects realising our ideal of healthy lives.

## CHAPTER VI.

### HEREDITY.

80. Certain facts about *heredity* should ever be present to the mind of the Medical Examiner. We shall now state the views which are most accepted regarding the various hereditary disorders, and their bearing on Life Assurance.

There can be no doubt that form and feature, mental and moral characteristics, are commonly transmitted by ancestors. The whole of a character is not so communicated—but portions only—and parents may be mere transmitters on the chain, their offspring representing an earlier ancestor, and but slightly resembling his father or mother. A man as he stands is probably the representative of many generations; nor would it be possible to say how far back he might trace certain peculiarities in his person or character. But as an individual he rarely entirely represents as a whole any one preceding member of his family tree. He is a union of many, taking, it may be, his moral development from one and his intellect from another. In person also his features, hand, colour, eyes, build, may have been separately transmitted by ancestors whom he has never seen.

It is true that a character will be traceable through many generations—as cruelty, pride, courage, deceit, and the like, are attributed to families of historical repute. But the individual stands alone,

and may find in himself the lineaments of five or six generations back, or heritable disease transmitted from a great-grandfather or even earlier progenitor. But, again, he may closely resemble his father or mother.

Certain general characters are transmissible, and form the likeness noticed in members of one family, but it does not follow that all are alike in mental or physical development, nor in strength or feebleness of constitution.

81. Allowing for all this, the influence of parents is the most appreciable in their offspring, and the most important from an insurance point of view; but it is always advisable to inquire higher up the tree if any constitutional disease such as phthisis or gout is to be traced. This may not be easy, but where practicable and plain, such information is most valuable. In tracing the effects of a transmitted tendency to disease, it is always necessary also to find how far others of the same generation—brothers, sisters, cousins—may have been affected by it. We have thus a gauge of the intensity of the transmission.

82. As a rule we should say that remarkable mental qualities are not very hereditable. The sons and descendants of genius in poetry, art, music, or statesmanship, are generally disappointing. Peculiarities of intellect which lean to the side of eccentricities are often transmitted through generations; brilliancy, occasionally; but genius, perhaps, never.

But the more we approach to what is physical—

dependent on structural form and perfect balance of the animal economy—the more does heredity show itself. Thus, the emotions, which depend much on the health of the nervous system, are transmissible, as seen in the excitability of whole families, and the easy yielding to sensual temptations of others.

83. *Longevity* is no doubt hereditary in some families, but longevity means perfection of the whole animal system, well-balanced nervous powers, and moral qualities which are not easily disturbed by temptations.

It is believed, and with reason, that a child resembling one parent will have that parent's diseases with more likelihood than other children not presenting the same resemblance.

84. If both parents have been the subject of the same disease the heredity is intensified on the offspring.

Several constitutional maladies of a different kind —as gout, cancer, rheumatism—in ancestors augurs badly for the health of the following generations. They do not neutralise each other, as has been asserted.

The inheritance of disease is marked by certain features which vary in the different affections.

85. A disposition for epidemic diseases is marked in certain families, for syphilis in others. Darwin considers that forms of disorder, malformations, and even maiming, are transmissible. The same great observer has noticed that diseases developed late in life are likely to be transmitted to individuals of the same sex; those of early life to both sexes.

86. *Insanity* is intensified by successive inheritance.

*Syphilis* is lost in the repetition of inheritance.

87. A mother may transmit without developing disease. She may be, as has been said, "*a silent carrier*," but the interposition of two or even more silent generations will not suffice to extinguish a taint.

Phthisis and cancer become intensified by transmission, and appear earlier in each generation. Likewise double inheritance induces earlier disease and of a form much more rapid. Heredity appears to influence the sexes equally.

### MODES OF INHERITANCE.

Thompson contrasts syphilis, phthisis, and insanity.

### SYPHILIS.

88. Either parent may transmit at any period within 20 years of the original disease. (Hutchinson.)

The disease itself is transmitted, and not merely a disposition to it.

An inherited taint protects against subsequent contagion.

The secondary poison may be propagated from the fœtus to the mother.

The disease does not appear in a second generation.

### PHTHISIS.

89. Either parent may transmit.

It may appear in the child before the parent.

The parent may be healthy, but transmit the disease.

The offspring contaminated by paternal inheritance does not infect the mother.

Phthisis gathers strength in each generation.

Phthisis *acquired* in one generation may become hereditary and be transmitted.

INSANITY.

90. Either parent can transmit.

Disease in the child often appears first.

Children are often admitted into asylums before their parents.

The paternal contamination of the child never affects the mother.

The disease generally increases in three or four generations.

The 1st may have a predominance of the nervous temperament, shown in passion, &c.

The 2nd: epilepsy or hysteria.

The 3rd: eccentricity, dangerous acts, and insanity.

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91. The dangers from phthisis occur within certain ages. They belong to the period of youth and manhood, and are rarely encountered after 45.

92. It is necessary to look to the idiosyncrasies of families with reference to the age at which phthisis occurs. In some the disease is observed to be developed in most of its members as they approach a

certain age, which is, therefore, the most perilous from an insurance point of view.

93. *Forms of disease* also run in families. In some the consumptive inherited taint is manifested in an acute tuberculosis, while in others the most chronic forms of fibroid phthisis are observed in successive individuals.

94. If *one parent* only have been affected with phthisis, it has been found that 38 out of 100 of the children succumbed. If both parents, then nearly all the children.

95. The *mother's* transmitting influence is greater than the father's, and it is common in all hereditary diseases for the mother to transmit to sons and the father to daughters.

96. In *hereditary* phthisis the disease appears earlier; often in young children, next in adolescence, but even in old age the disease may crop out. The ordinary rule is, however, that the heredity has exhausted itself at 45.

97. *Family phthisis* appears at an earlier age as you descend the genealogical tree. For instance, the grandfather might have it at 60, his sons at 40, and his grandsons in early life.

### CANCER

98. Is hereditary in one-third to one-seventh of the cases. It has a tendency to reproduce itself in the same organ as the parent. It is most prevalent between 40 and 60. The encephaloid form is met with earlier, scirrhous from 40 to 50, epithelial cancer

later. The risks of hereditary cancer, therefore, increase with age after a certain point, while those from phthisis diminish.

The rule must be to reject the issue of two cancerous parents, especially if it have shown itself in other members of the family; but a healthy person at 30 to 40, whose one parent had cancer, may be accepted. Some would add to the premium, but we have not done so.

99. Of *rheumatism* and *gout* the heredity is incontestable. Gout is the most heritable; acute rheumatism next. Chronic gout or chronic rheumatism comes between the two. Hereditary gout appears early, often at 18 to 20 years of age; acquired gout appears about 40.

Acute rheumatism will commonly appear from 15 to 20. If both parents (or one) have had *several acute attacks* of gout or rheumatism there is great probability of transmission to the offspring, and an addition should be made to the premium, proposer being perfectly healthy and having no affection of the heart or kidney, and the age being 30 to 40.

### DIABETES

100. Is allied to gout and rheumatism, and comes after rheumatism in frequency of heredity. Such is Pavy's opinion, who in 1,360 cases found

30 per cent. between 50 and 60
24 „ „ „ 40 „ 50

It is often seen in brothers and sisters. A proposer

should be declined if both parents died of diabetes. Again, if one parent had died of it, and the proposer's brothers or sisters were gouty, some think that, even though quite healthy and under 50, such proposer should be declined. We should consider it a case for addition to the premium.

### HEART DISEASE.

101. As rheumatism and gout are the most common antecedents of heart disease, so the heredity must be regarded as identical in each. Rheumatic fever in the parent or ancestor predisposes not only to the same disease in an acute form in the offspring or descendant, but to chronic alterations in the heart structure without any preceding acute attack.

It may perhaps be asserted that acute rheumatism in the parent predisposes more especially to acute attacks in the child, and gout in the parent to chronic changes in the valves of the heart in the offspring. But it should be clearly understood that rheumatic or gouty parents frequently transmit that which results in slow thickenings of the heart-valves to their children. Of this we have had very many instances in practice, and it is here that the heredity is manifested. It were, indeed, impossible otherwise to account for the many cases of valvular lesions met with where the individual has had no acute attacks of rheumatism or gout, nor any acute endocardial ailment. The reasons are to be found in family history, and it is here evident how large a part heredity plays in this class of affections.

102. If *one parent* have had rheumatic fever, or gout severely, the proposer being in perfect health, the heredity may perhaps be overlooked.

103. But if *both parents*, or *grandparents*, have had gout or rheumatism with heart disease, and proposer has had even a slight form of either disease, the life should be declined, or at least a large addition made to the premium.

104. *A child of rheumatic or gouty parents*, who has himself bronchitis habitually or frequently, or emphysema—or eczema—should not be accepted, though there are cases which, if habits be perfectly temperate, might be accepted with an addition.

### ASTHMA.

105. *Salter* found that asthma was hereditary in 14 cases of 35 observed by him, and in seven it was paternal and direct. The most frequent period of development in such cases was in youth—up to 20 years of age—next in old age, and least in adult age. At 40, however, he considered that the heredity was nearly over.

106. *Trousseau* considered that eczema, rheumatism, and gout, were affections which asthma can replace, and which can replace asthma. They are, in fact, different expressions of the same diathesis.

107. In our estimate of the chances of hereditary transmission, we may accept an individual with an asthmatic parent at ordinary rate if he has had none of these affections, has a well-shaped (not emphysematous) chest, and is between 30 and 40.

108. If both parents were asthmatic, or a grandparent and parent, or other member of the same generation, an addition should be made, unless proposer be over 40.

ANGINA

109. Is hereditary only if gouty, and a proposer who is gouty, with a parent who had suffered from angina, should be only accepted with an addition. It is a rare disorder. In a record of general hospital practice, out of 3,873 cases of illness only 21 had angina, of whom 4 died. The disease is, however, more frequently seen in private practice.

ALBUMINURIA, GRAVEL, LIVER DISEASE,

110. May be regarded as only transmissible when the result of a constitution in the parent as gout and alcoholism. Gravel is only hereditary as gout, and is developed late in life. Liver diseases are acquired, as cirrhosis due to alcohol. Hydatids are exceptional. Cancer of the liver may be regarded as the only heritable affection.

SYPHILIS.

111. Its hereditary character will rarely come before the Medical Examiner for obvious reasons. Persons are little likely to acknowledge to its existence, and its manifestations occur in the earliest periods of life.

INTEMPERANCE.

112. We consider this to be hereditary in a marked degree. Intemperance runs in families, who not only inherit the feebleness and nervous constitution which

drunken parents transmit, but that peculiar temperament which flies to stimulants as a resource on any emergency of life which requires the command of a steady will to meet it with resignation or face it with brave resolution.

The temptation to intemperance is not equally strong in all. To some there is no temptation to exceed. Stimulants bring to them no pleasure, or, at least, a limit is very soon reached when the effects on the system cease to be agreeable, and in many become disagreeable. In some the stomach early rebels, and nausea, with irritable dyspepsia, results. In others there is no agreeable excitement whatever. They become dull rather than excited, and pleasurable occupations in which they may be engaged are blunted by the use of stimulants. The other senses are quelled, and the habitually sensual man, in other senses than intoxication, is not a drinker. Thus, a large proportion of the self-glorious teetotalers have had no temptation to exceed in stimulants. In them, opium, tobacco, and alcohol, do not exalt the sensation nor minister to dreamy delights, but simply stupefy.

113. But there is also what is called a *craving* for drink—a want which alcohol alone can supply, which renders mental or bodily exhaustion endurable, and which stops for the time the waste of nerve power, and that it is which is heritable, and is often derived from the excesses of drunken parents. The temptation to fly to the use of alcohol is not found in perfect health and balance of the organism, but is in almost all instances an inherited weakness.

114. But, still further, the children of drunkards inherit various neuroses which are eminently hereditary—such as hysteria, epilepsy, mania, ataxy, and various forms of paralysis. The common saying that they *die early* is true, and a child begotten during a time of drunkenness early falls a victim either to consumption or to some deep-seated disease of the nervous system.

115. For our purpose we have dwelt sufficiently on this subject. The child of even one drunken parent, or, still more, with antecedents of intemperance in two or three generations, should be most scrupulously investigated as to habits, and be of unexceptionable personal health, having especially no indications of a feeble nervous system. Still further, he should be in a position of life in no degree exposed to the risk of intemperate habits. He should not be a publican, or wine-taster, nor hotel-keeper, and, so far as can be ascertained, the Office should have satisfied themselves that he is not usually exposed to worries and anxieties of either a domestic or business nature.

### DISEASES OF NERVOUS SYSTEM

116. Must also be regarded as eminently heritable. In the same family we often observe epilepsy, general paralysis, and mania. Charcot considers locomotor ataxy as hereditary, in which cases it is developed in early life, although generally found at the middle period.

In estimating the case of a person with a family history of neuroses, we should carefully ascertain if

nervous disorders exist in his brothers or sisters, or in any of the same generation. If this be the case, we could not advise acceptance unless proposer had reached middle life, was of temperate habits, and had no indication of neurotic symptoms.

117. As exceptions to the heredity of nervous affections may be pointed out progressive muscular atrophy, infantile paralysis, and lateral sclerosis (Charcot's disease).

### CEREBRAL HÆMORRHAGE,

118. Which is commonly due to miliary aneurisms of the vessels of the brain or to sclerotic changes in the arteries, may be considered so far heritable as it is due to rheumatism or alcohol. It is also true of cerebral softening which arises from arrest of local circulation by embolism or thrombosis primarily due to cardiac disease or atheroma of vessels. The children of parents so affected, if the latter have died early, should be accepted with great care and an addition to the premium should be made. If proposer has had rheumatism or gout, he should be declined.

A French pathologist has well said :—

"On a l'âge de ses artères."

### EPILEPSY

119. Is most hereditary. The children may not have epilepsy, but will have some neurosis. In 321 epileptics one-third had epileptic parents. According to another report of 364 epileptics, whose parents were similarly affected,

One-twentieth were hysterical,
One-ninth „ insane,
One-ninth „ paralytic.

120. *Mothers* appear to transmit more than fathers, and the offspring often have infantile convulsions. The disease can be transmitted from ancestors, the parents having been free. Alcoholism in ancestors remarkably predisposes.

121. The *children of epileptics* get the disease early in life, up to the age of puberty—and it may be considered that after 35 or 40 the liability to inheritance is exhausted.

We have thus a rule for Life Assurance—those under that age with such heredity should be rejected, or with undeniable personal history might be accepted with a considerable extra, but in such case the brothers and sisters of proposer should have been free from neurotic disease.

122. There is a form of *mild idiopathic epilepsy* not inherited which is curable, and may be considered exceptional and assurable if the cure has been perfected for some years.

## SUICIDE.

123. We have often presented to us a proposer one of whose parents has committed suicide. There can be no doubt that in many cases of suicide there has been no insanity. The pressure of domestic calamities, of broken fortunes especially involving wife or children, the expected punishment for dis-

honesty and betrayal of confidence, the sudden yielding to the temptation to retrieve losses by taking money or securities entrusted to a person whose character has been hitherto irreproachable, and the dread of exposure, grief for the death of loved relations, and, above all, the secondary horrors of debauch, may be mentioned as common causes of self-destruction where there may have been no previous insanity—nothing, indeed, that was heritable; or without any of these causes, there may have been mistaken views of the future life and actual responsibilities for the tenure of the present one, which have often induced men in perfect sanity to put an end to their present existence. The child of such a man may be perfectly sound in nervous system, and have no relative insane, and we believe may be accepted at ordinary rates. But, of course, many cases of suicide are the result of insanity, and if the proposer have any other relative similarly affected, or the subject of epilepsy or any serious nervous disorder, or have himself suffered from such, he cannot be accepted on any terms.

INSANITY

124. Is eminently hereditary—about one in three or four have had a parent or parents insane. As in phthisis, an accumulation of heredity in several ancestors is almost certain to induce the disease. But the same forms are not always transmitted. The disease is rare under 20, but increases from 20 to 45, and diminishes after. In women the most common age is from 30 to 45.

It is difficult to lay down rules, but we might say that the issue of one insane parent might be accepted if 35 to 40, and without any nervous affection. If his brothers or sisters have been affected, the case is more than doubtful, but perhaps a considerable addition to the premium might compensate the risk.

### SKIN.

125. There are certain skin affections which are hereditary, probably in so far as they indicate a certain constitution. Such are eczema, which goes with gout, and lupus, which is a manifestation of struma. The existence of these in parents does not forbid the acceptance of the life, provided that he does not show any other indications of the diathesis indicated.

126. *Leprosy.*—The hereditary nature of leprosy has been questioned of late years, although formerly held. But the evidence of the Indian Commission, Munro, and others, is opposed to its heredity. Its contagiousness is, however, undeniable, and seems to be the chief mode of its propagation. Its frequent occurrence in several members of the same family is an undoubted fact. At present some offices with agencies in Mauritius and the West Indies decline lives when both parents have been leprous, and add 5 or 7 years if one or more collaterals have had the disease; and having in evidence at least its endemic and contagious nature, we cannot advise any relaxation of the rule. Also, should proposer suffer from the disease, the life should be declined.

## CHAPTER VII.

### ALCOHOL.

127. *Intemperance* is perhaps the most formidable enemy to the safe assurance of life. It ranks before phthisis in its deadly effects on the human system. Not only is it often inherited, but organic ailments are by it originated and organic weakness crystallised into disease. The tendencies to disease—as phthisis, gout, rheumatism, and diabetes—are by it converted into actualities. Its slow insidious effects on organs, in hardening their connective tissue and thereby contracting as by a band on their blood-vessels and choking off their supply of blood, are exemplified in cirrhosis of liver, but act also on the lung and kidney. By promoting the fatty degeneration of muscular tissue in the heart and whole system of arteries and favouring sclerotic changes in their coats, the circulation from its centre to its ultimate terminating branches is affected, and either by failure of the heart itself or by depriving the vessels of their elasticity and contractile power, and favouring atheromatous changes in their coats which lead to rupture and hæmorrhages, it becomes a deadly agent. The vessels of the brain are sure to be involved, and apoplexy rendered most likely. The degenerations of age are anticipated and precipitated by alcohol, and the dram drinker is thus sure to have a shortened life.

128. The primary effects of alcohol on the

nervous system—from various disorders of motion and sensation up to delirium tremens—are among the earliest but not the most fatal of its results; and the organic alterations which we have indicated are found rather in the dram drinker than in the drunkard. It is the man who carries his drink well and is always under its influence who is in greatest danger. We must therefore decline to attach any value to the statements of a proposer or his friends that he "Never was known to be drunk!" Small doses of stimulants taken repeatedly through the day, and ended by a somewhat larger one at night, leave the system charged with alcohol from which it is in fact never free, and the excretory organs are therefore continuously under its influence. These are the most dangerous cases, and therefore the medical inquirer should not rest satisfied with the reply, "I have never been drunk in my life." The most searching inquiry should be made, with all the tact of the physician, as to the quantity taken each day, and the frequency of the dose. We may forgive the rare outbreak of the youthful on certain festive occasions, if we are satisfied that the habit of drinking in the day hours has not been acquired; but we cannot pass the proposer whose daily habit it is to take stimulants three or four times in the twelve hours. Drinking between meals should always be inquired about in cases in which we have any doubt about habits.

129. The evidence of friends about temperance is often of a most unreliable nature. Each man has his

own measure of what constitutes "temperance" or may be called excess.

When evidence as to "moderation" is required the replies are often most unsatisfactory, and it has frequently to be wrung out of a "friend" by repeated correspondence what the habits of a proposer really are. Assurance secretaries are well aware that this is almost the most troublesome part of their duties, and that finally even the most elaborate correspondence will fail to clear up the point to the satisfaction of Board or Doctor. In such cases we are inclined to give the Office the "benefit of the doubt."

130. In important cases of this class it will be well to insist on a personal examination by the Chief Medical Officer, as country agents, and sometimes even the country doctor, are apt to be influenced by local considerations and the personal importance of the proposer in his own neighbourhood.

131. In studying the facts of intemperance, we may distinguish the following classes of victims :—

(1) The *dram drinker*, of whom we have already spoken.

(2) The *occasional drunkard*, who may get drunk at a fair or a festivity several times a year, being temperate in the intervals. This is very common in country districts.

(3) The man who has violent outbreaks of intemperance *at long intervals* which may last a week or a month, and then under

the influence of duties to be performed, or fear of dismissal from office, or other powerful causes endangering his position in life, subsides into temperance or even abstinence. We have known of a surgeon in charge of an outlying station in India have such an outbreak once a year, when he had a month's leave, during which time he secluded himself in his rooms, and was drunk during the whole term. On his return and till the following year he was abstinent and unsuspected.

For none of these classes can we find a place in Life Assurance. All of them are among the most dangerous risks which are offered to us; and no money compensation can be put against the chances of such a life breaking up suddenly.

132. In addition to all we have said above, it is notorious that the drinker to excess bears surgical injuries and ailments requiring operation badly, and that he cannot stand up against acute fevers and inflammation, or pneumonia. He lives in a state of depressed vitality, and cannot resist illness.

We have spoken thus strongly because of the vital importance of this subject to Life Offices and their advisers. A man with an injured valve in his heart, or a portion of his lung diseased, or with albumen in his urine, may outlive all calculations, but a habitual drinker to excess never.

TEMPERANCE OFFICES.

133. Some offices, aware of the vast importance of moderation in the use of stimulants, will accept lives of whose temperance or abstinence they are certain, at a lower rate.

But there are some uncertainties in this practice too. A man may be abstinent now, but who can secure his perpetual abstinence? Again, if certain offices are open to total abstainers who are only reclaimed drunkards, are they safe in their risks? We scarcely believe in the existence of a reclaimed drunkard, so rarely is he met with in medical practice, and after many years of active professional work we have scarcely seen two such cases which could be verified. We cannot, therefore, advise the acceptance of a total abstainer who is known to have been habitually intemperate. They almost always break out again.

134. We must here express the opinion—which is that of the most thoughtful and informed of the profession—that the moderate use of stimulants does not tend to shorten life. By "moderate," we mean stimulants taken in small quantities—with the meals—and not more frequently than twice in the day.

135. It is customary for offices to accept *publicans* who are stated to be temperate with a uniform addition of £1 to the rate, and it is of course believed that any extra risk from intemperance is thereby covered; but we are far from holding this opinion, as the observed rate of mortality among this class of persons, who are so much exposed daily to the temptation to exceed, is extremely high. In addition to the

temptation to drink, they live in ill-ventilated rooms, often exposed to draughts, and always, in towns, in an atmosphere vitiated by gas, and often by crowding. Their hours are late, their meals hurried, and opportunities for out-door exercise are very limited. Apart from the ordinary effects of intemperance, they are very subject to fevers, rheumatism, and congestions, and are frequently the victims of phthisis. Some offices will not have them on any terms, and they are not far wrong.

## CHAPTER VIII.

### HEART.

136. The Medical Examiner will ascertain by an examination, made in every case while the chest is uncovered, whether the position, size, and rhythm of the heart are normal.

137. *Percussion* will reveal the size of the heart and its place in the chest. The upper margin may be found in the middle of the second intercostal space; and the apex in the fifth intercostal space, about midway between the line of the left nipple and the left border of the sternum, three and a quarter inches to the left of the middle line, and about one and a half inches below the left nipple. If the apex beat be below or outside this position, a cause should be sought for, either in displacement by pressure or by enlargement of the organ itself.

138. *Displacement* by pressure may be from effusion into the pleura or pericardium; or the whole organ may be drawn *up* by the shrinking of a pulmonary cavity in the left apex; or to the middle line, or even beyond it, by a similar cavity in the right lung.

139. An *enlarged* heart will mean hypertrophy, with or without dilatation, valvular obstruction or imperfection being the ordinary originating cause.

140. *Rapidity of beat* is of no value unless permanent; slowness of beat (as 40) may be constitutional, but other signs of weak heart should be looked

for. Greatly increased strength of beat accompanies hypertrophy.

### RHYTHM OF THE HEART; OR, THE ORDER AND REGULARITY OF ITS SOUNDS.

141. The *first sound* is longer, louder, and lower in pitch, and is strongly accentuated at the apex. The second sound at the same point is shorter, less loud, and higher in pitch, but at the base of the heart the second sound is more accentuated. The interval should be regular in duration.

142. The *first sound* may be feeble almost to inaudibility, and the accompanying impulse weak, commonly a sign of degeneration of the muscular fibre of the left ventricle.

143. The *second sound* may be flabby or greatly prolonged, a condition commonly associated with progressive dilatation of the chambers, and degeneration of muscular fibre. A prolonged cardiac sound may become scarcely distinguishable from a murmur.

### PULSE.

144. The *number* of the healthy pulse varies with the condition of the nervous system, and with the posture, whether standing or sitting, and is affected not only by emotion, but by recent muscular exertions. Its number in health might average between 60 and 70, but a large range should be allowed for individual temperament and emotional causes. It is commonly accelerated by the fact of its being specially examined, and the physician who finds a

rapid pulse should permit time for its subsidence, or even return on another day for a fresh examination before sending in his report. A pulse temporarily so excited should not be set down as morbid, especially if unassociated with any signs of heart affection.

145. A *sustained high pulse*, with or without high temperature, may be indicative of fever, and hectic or exophthalmic goitre. It may be traceable to lung disease, which should be looked for.

146. The *fulness* and incompressibility of a pulse should be regarded as well as its number; and its harshness or wiriness under the finger, which may be indicative of sclerotic changes in the arterial coats, should be noted.

147. A *small and weak pulse* is generally found with mitral disease, while a pulse which falls abruptly from each stroke ("water hammer" pulse of Corrigan), is indicative of defect in the aortic valves, permitting regurgitation.

148. A difference of 8 to 10 beats may be caused by the difference between a sitting and a standing posture.

149. *Irregularity* and *intermission* of *heart action.* Of these the first is by far the more important, and is commonly associated with degenerative changes in the muscular structure of the heart. The heart will repeat a number of rapid beats, then pause and lose one or several. The sounds are confused in character, or run into one another; the impulse is almost constantly diminished, and the interval lost or irregular. Feebleness is the character predominant, and in truth

there has already occurred some degeneration of muscle. These cases are ineligible for Life Assurance, being subject to the accidents resulting from weak heart.

150. A *tumbling* but forcible and struggling heart-beat is not to be confounded with the above. It is commonly the result of pericardial adhesions and subsequent hypertrophy, more or less marked. Its value for Assurance purposes will depend on its degree, its duration, and its cause. If it be traceable to a rheumatic pericardial inflammation, which occurred many years ago, and if no endocardial (valvular) mischief be present, and if the proposer has already reached middle age or later, an addition to the premium might compensate the extra risk. The dangers to life would probably arise from the consecutive events of hypertrophy: ultimate dilatation of the heart's chambers, with impairment of its valves. This is a slow process, and it is not absolutely certain that adhesions of the pericardium must end in such a manner, there being at the time the case presents no evidence of valvular disease. We are inclined to advise a considerable addition to the premium, but much will depend on the diagnostic skill of the physician and his acquaintance with such cases. However, in our judgment such proposers need not be peremptorily declined.

151. *Intermission of pulse* in its simple form (that is unaccompanied by the *irregularities* of which we have spoken) may not be of grave importance. If it be rare, that is a loss of beat once only in 20 or 30,

it may be regarded as harmless, its meaning being referable only to an alteration in the innervation of the heart. A common feature of such simple form is that it is not always present. It may be absent for days or weeks, or be suspended during a feverish attack, or be present only during fever or some trivial alteration of digestion. Its presence should not be an obstacle to Assurance at the ordinary rate.

MURMURS.

152. A *murmur* may be audible over any of the valvular regions of the heart, and accompanying either the first or second cardiac sound, or both.

The *localisation* of a murmur will be evidenced by its point of greatest intensity, and its conduction in certain directions from that point.

153. The *characters* of a murmur, its softness, blowing, harsh, or rasping sound or intensity, are *per se* no indications of its value in Life Assurance, nor, indeed, of its ultimate pathological import. A harsh and loud murmur heard over a valve is indeed often of less serious nature than one more distant and less pronounced, inasmuch as the power of the ventricle behind the obstruction is generally the cause of its loudness, and a moderate degree of hypertrophy is to be regarded as a compensating agent. If there be obstruction at a valve, all symptoms of heart disorder may be held in abeyance for years, if only the heart have power to drive the blood through the narrowed opening. It is only when the heart fails to do so through diminished power of its muscles that the serious symptoms of dilatation and its consequences

are initiated. Again, if the valve permit of regurgitation, and the integrity of the muscular walls of the cavity into which the blood is returned be efficient in contractile power, the dilatation is opposed, and all its concomitant symptoms are absent or delayed.

154. The power of the ventricle is not, however, the only cause of the loudness of a valve murmur, for the thickening of the valve by atheroma or other deposits, may mechanically develop a more or less loud or even musical murmur in the blood as it passes over it. Still, the rule holds good that the character of the morbid sound is no indication of its danger.

155. *Ephemeral murmurs* often give rise to doubt as to the safety of Assurance.

A *murmur* with the systole in *the left subclavian* region is often heard when the stethoscope is tightly pressed on this part. It is due to pressure, and need not be regarded with suspicion if no other morbid sign be present.

156. *A sort of murmur* is occasionally heard over that part of the heart which normally is covered by the left lung in front, when, owing to lung causes, retraction, or disease, it is less covered than usual. It is not permanent, and is often only observed when change of posture, as lying down, brings the surface of the heart against the chest walls.

We have detected irregular murmurs even near the apex, of occasional character, and doubtless due to position, as they are only heard in the recumbent posture, or when the patient inspires deeply, or

expires. These are not to be regarded as prejudicial to life.

157. The *characters* then of a murmur must always be taken in relation to other signs, its situation, its increase on exertion, its conduction in certain directions, and the concurrence with signs of secondary disorder in the heart itself, as hypertrophy or dilatation of its chambers.

The *mechanism of murmurs* is too large a subject for these pages, and is outside our scope, but whether they are caused by the blood itself, or the vibration of thickened valves, or by alterations in the size and shape of the orifices, their identification as associated with certain structural changes in the heart itself can generally be determined by careful observation.

### ANÆMIC MURMURS.

158. Commonly referred to alterations in the blood itself, which becomes more watery, and loses some of its red corpuscles. The site of the murmur is over the first part of the aorta and pulmonary artery. It is systolic, soft, or blowing in character, and prolonged. It is conducted up into the neck, but is often heard down the ventricle even to the heart's apex, but with lessened intensity as you descend. It is diffused over rather too wide an area. It may be accompanied, or not, by a continuous whizzing sound in the jugulars. The subject of such a murmur is generally young, more commonly female, and presents pallor of skin, lips, tongue, and conjunctivæ.

It cannot be denied that anæmic murmurs are

often heard over the mitral valve, and due to temporary causes rather than to structural alterations. It is to be remembered also, that in very prolonged cases of anæmia, fatty degeneration of the walls of the heart has been found.

159. Recognised by a careful discrimination on the grounds indicated above, these cases are not to be rejected for Assurance purposes. If the proposer be only the subject of anæmia in its simple form, he is not to be rejected because he has a soft murmur over his aorta, and a venous whiz in the jugulars. He may be only temporarily out of health, and his lowered condition may be due to over-work, anxiety, irregular meals, or loss of sleep, and if these injurious conditions be altered the individual may recover from all his symptoms and physical signs. But at present he is not an insurable life, and the rule should be to defer the case for some weeks or months, or till a competent medical opinion has proved that the anæmic condition has ceased.

### AORTIC MURMURS

160. May be *single* or *double*, *i.e.*, heard with the systole or diastole of the heart, or both. Their site is over the valves and first part of the aorta, at the top of the sternum, and about the second right costo-sternal articulation. They are conducted up the vessels of the neck in the direction of the aortic current. They may be harsh and abrupt, soft and prolonged, or (very rarely) musical in tone. They are more limited in area than the anæmic, generally more harsh and less blowing.

161. The *single systolic aortic* murmur is probably obstructive, the orifice is narrowed, the valve thickened or warty. When such condition has long prevailed, the left ventricle becomes hypertrophied, and the cardiac dulness proportionately increased. The size of the heart may be mapped out by percussion.

162. In *aortic regurgitation*, recognised by a double or diastolic murmur, the greatest degree of ventricular hypertrophy occurs; and the heart attains eventually an enormous size, its structure becoming hypertrophied in compensatory efforts to maintain the systemic circulation against the force of gravity, the open valves permitting the return into the ventricle of a large portion of the propelled blood. The carotids are seen throbbing, and the radials present the well-known characters caused by sudden recession of the blood current called the "*water hammer pulse.*"

These are among the most fatal of heart affections. Either the heart fails suddenly, the carotids are not supplied, and cerebral anæmia and syncope end the case, or the nutrient coronary arteries of the heart itself fail to supply it, and death occurs.

163. These cases of *aortic murmurs*, systolic, diastolic or double, are entirely uninsurable—the elements of durability being wanting. We have not to deal, as in mitral cases, with gradually accumulated alterations of structure, which imply a definite series of progressive morbid events, and so become somewhat calculable as to time; but life may, and

often does, end suddenly, owing to the failure of the systemic supply—especially to the brain. The ordinary results of cardiac dropsy, overgorged right cavities of the heart, pulmonary œdema, and hæmorrhage, are rarely seen in these aortic cases, and then only when the mitral valve and right chambers of the heart have yielded. But the sufferer rarely lives long enough to die in that mode.

### MITRAL MURMURS.

164. These are the most common results of rheumatic endocarditis resulting in thickening of the valve and narrowing of the mitral opening (stenosis), or permanent imperfection of the valve, permitting regurgitation of blood into the ventricle. The first condition (stenosis) is indicated by a murmur—more or less marked—occurring in the last part of the diastolic period. It may be loud, harsh, or musical, but it is generally less rasping than the regurgitant murmur, which occurs a little later in the systole. It is heard with greatest intensity at or near the apex of the heart.

165. The *systolic* or *regurgitant murmur* is somewhat similar in character—occupies the whole period of the heart's systole—is conducted into the axilla and scapular region, and is generally loud, harsh, and prolonged, especially if the power of the ventricle be unimpaired.

The distinction between these forms of mitral disease is very rarely made in medical reports on lives, and greater accuracy is desirable.

The recognition of these cases is easy, but their value for the purposes of Life Assurance depends not on the character and situation of the murmur, but on other conditions already alluded to, which we may here recapitulate.

166. It is now a well-ascertained fact that numbers of persons may have a marked mitral murmur from childhood on to advanced age without undergoing any symptoms, and therefore without the effects of heart disease recognised as injurious to life. The best medical authorities have given numerous instances in which mitral disease has been recognised by its signs over many years without any important alterations in health. The writer has known such cases last for twenty and even thirty years, and lately published experiences by Sir A. Clark and others amply bear out this view.

167. The causes of such impunity when a portion of a vital structure has been permanently damaged appear to be entirely mechanical.

If the ventricle behind a thickened or imperfectly closing valve maintain its muscular integrity so as to be powerful enough to propel the blood through the opening and to permit of only a moderate degree of reflux (or regurgitation), and is *possessed of sufficient muscular tone to resist dilatation of its cavity*, the balance of the circulation is maintained, and the organism suffers but little inconvenience.

168. The first downward step in the often fatal events of mitral disease is when the auricle and ventricle of the heart begin to yield to the pressure of

the regurgitated blood and dilate. With dilatation a thinning of the muscular walls sets in, and degeneration of muscular fibre follows as a necessary sequence. With lessened power of the ventricle, engorgement of the right side of the heart occurs, the return current of blood is blocked in the auricle, which in its turn dilates, the lungs become congested, the return of systemic venous blood is retarded, and the phenomena of congested lung (shown by œdema and hæmorrhage), of congested venous and capillary systems (evidenced by dropsy and effusions), are not slow to follow.

The series of events is mechanical, and it may be stated that so long as the muscular integrity of the heart's walls be maintained, the subject of the affection may live and enjoy fair health.

It is true that he is not fit for very active exertions, which would throw an extra strain on the heart's action, but with ordinary precautions he may live safely. Such is the most plausible and accepted theory of these mitral cases of long duration.

169. The *dangers* to such a life would probably arise *after middle life;* or at the period when degenerations of structure commonly set up. At such a time the heart's muscles especially are subject to fatty degeneration, and the earliest danger in a mitral case is muscular weakness of the ventricle.

170. The rule of Assurance Companies has hitherto doubtless been to reject all such lives as present any form of mitral murmur, and they are

certainly uninsurable at anything like the ordinary rate.

But if a case present with murmur only, and without great enlargement of the heart, or any secondary disorder, and especially if the ventricular contraction be moderately strong, without the signs of much hypertrophy, and the murmur be well pronounced; and if, in addition, it can be shown that such condition must have prevailed for a long time, say from the date of one attack of rheumatic fever many years previously, and if the proposer have unimpaired health, and does not exceed 35 years of age—it is our opinion that it is possible to accept such a life with a considerable addition to the premium.

171. It is here that certain modes of securing the office come into play, as elsewhere shown; and as the dangers of such a case do not come to the surface commonly till about or after 45 years of age, the payments for a whole life policy may all be paid up in a short term of years—say eight or ten. We hold that such lives are insurable, and certainly if a sufficient number of them presented, so as to make the risks spread over a number of similar cases, we feel sure that offices would be safe in accepting them. But to take one or two only, which by chance might not verify the prognosis, might bring the practice into disrepute.

172. It remains to say of heart cases that *the most dangerous* are those indicating failure of power and muscular tone, and that the aortic cases are

much more perilous than the mitral, the former being, in our judgment, ineligible at any rate which may be assigned to them, while it may be possible to compensate the increase of risk in the latter by additions in some form to the premium.

173. The presence of *albumen* in the urine should always be looked for in connection with heart disease.

## CHAPTER IX.

### HÆMOPTYSIS.

174. The occurrence of blood-spitting at some former period of a proposer's life is so frequently brought under the notice of the Medical Examiner for Life Assurance, that its study requires peculiar care, and in every instance an opinion should only be formed after the most careful and skilled examination. As regards the description of the occurrence given by proposer, we shall find that it is generally somewhat like this:—

175. (A.) After a run or *strain* in athletics—as rowing, or lifting weights—"a mouthful" of fluid blood is stated to have been brought up: some hours after or next day a few clots, and then total cessation without any subsequent disorder of health.

176. (B.) Having had "cold" or slight cough for a week or two, "a few streaks" of fluid blood mixed with phlegm have been brought up, and a recurrence of the symptom may or may not have taken place some time after.

177. (C.) Having had "cold" or cough as above, a "spoonful" or more of red blood is brought up, often in the morning on waking—and this also may recur after an interval of days or weeks.

178. (D.) Without acknowledged disorder of health or cough, a robust, or it may be a spare person, may bring up a mouthful of fluid blood, dark, or it may be in clots, for a day or two, when it ceases

without leaving any symptoms of illness, but may return — probably will return — some time after, as weeks or months.

179. (E.) A copious blood-spitting—cupful or pint—fluid at first, then clotted, repeated it may be or not, with or without any manifest disorder of health.

Such are the most common forms of description of blood-spitting, which are given us orally or reach us as Medical Reports from Examiners at a distance.

180. But little can be gained from such as to the *cause of* the blood-spitting, but before examining the varieties of hæmoptysis, we would remark that A is the common story of the occurrence of strain or injury, that B looks like ordinary phthisis, while C may be initiative of early phthisis, or hæmorrhage from a cavity already established in the lung.

D is probably of cardiac origin or from hæmophilia, and E may be from aneurism, or lung cavity.

181. We shall now consider each of these causes. With varieties B and C we shall probably have a statement of physical signs from the Examiner, which, however slight, will lead at once to a rejection of the life: such as dulness on or under the clavicle, with harsh or deficient breath sounds, long expiratory sound, or blowing with increased resonance of voice in the supraspinous region. Or the ordinary physical signs of cavity in the lung will be present, or possibly a crepitant sound on cough in the apex of one lung. We might here remark that softening of tubercular deposit commonly begins at the back part of the apex of the lung.

182. Passing from these, which are readily distinguished, we will consider blood-spitting arising from—

(1) Strain or injury.
(2) Cardiac disorder.
(3) Hæmophilia.
(4) Aneurism.

183. *Hæmoptysis* from *violent exertion*, as in rowing or running, will be a simple hæmorrhage, occurring at or very soon after such strain, and without thermometrical rise of temperature. It is often a relief from a feeling of tension in the chest, and may exist without any subsequent symptom of ill health. A careful Medical Examiner may have no physical signs to report, and the symptom will have occurred in a young and robust subject, who is able after a few days' rest to resume his usual occupations. If the above be a true statement of the case (and we have seen many such) a sound condition of health, and an absence of physical signs of heart or lung disorder, may exist for an indefinite time, and the individual have no return of the symptom.

After scrupulously weighing the story of the case, if there be no family tendency to lung or heart disease, and if years have elapsed since the occurrence in question, we are of opinion that such may be accepted with a small addition to the premium, especially if the applicant has passed 30 years of age. We advise that these cases should be personally examined by the chief Medical Adviser to the company.

184. *Blood-spitting* from *cardiac disorder* is in my

opinion met with in two very distinct forms, having a very different value as regards danger to life.

The *more severe form* is commonly due to mitral disease, and occurs late in the history of disorders to health arising from that cause. Mitral stenosis or regurgitation will commonly have already caused dilatation of the ventricle and auricle, with manifest venous congestion, before a hæmorrhage into the lung, or in its bronchial apparatus, will take place. It may then be so severe as to merit the term of pulmonary apoplexy, or present the characters of congestion of lung tissue, equivalent to pneumonia. The physical signs over the heart and lung would sufficiently betray this condition, and as such it will probably seldom reach the Medical Examiner of an office, and need not in fact be further considered.

185. The condition which we have described in D is much more likely to be brought before us officially, and is in fact of not infrequent occurrence. A person of any age, but commonly under 35, will have brought up blood from the mouth on various occasions—fluid, or more commonly dark or clotted—and have but little disturbance of health. There is commonly no cough, nor any expectoration, and if there be a chest symptom it is slight dyspnœa on going up-stairs or making any sudden exertion. The most careful examination will detect nothing wrong in the lungs, and the subjects of the accident have commonly large and well-made chests. There is no rise of temperature at or after the attacks, and the nutrition of the body is perfect. The hæmorrhage

may occur once in a life, or several times at intervals of months or years. We have notes of about 300 of such cases, and in all the only organic lesion to be detected was a slight click with the heart's systole at the apex, or more commonly at the lower end of the sternum. We have noticed that in many cases of women suffering from menorrhagia the same cardiac sound was heard. We have examined these cases over a series of years, and have been satisfied in almost all of them that no other evidence of cardiac affection was present, and that at all events during our period of observation no more serious symptoms arose.

186. We mention them as necessary to be considered in a recapitulation of the various causes of hæmoptysis. The duration of long periods of good health, and the consequent robust appearance of the proposer, and the absence of any physical signs of lung disease, may throw the examiner off his guard, while the slight and scarcely appreciable alteration in the first cardiac sound at the apex which we have noticed above may cause it to pass unnoticed. We are of opinion, however, that these cases belong to the class of mitral valve imperfection, and as they may eventuate in serious disease, cannot be entertained as subjects for Life Assurance.

It is conceivable that a short-term assurance might be effected on terms proportionately high, but the Medical Examiner should be well satisfied of the nature of his case before accepting such.

187. It must further be remarked that hæmor-

rhage of cardiac origin is really a bleeding from the lung or some part of the bronchial apparatus, and that occasionally the spot from which it proceeds may be localised by slight physical signs. They are, however, of a temporary kind, and may disappear without leaving any traces of lung disease.

188. *Hæmophilia* is recognised by the constant liability to bleedings more or less profuse from slight causes, as the application of leeches or the extraction of a tooth. Such individuals are also subject to hæmoptysis from slight or no apparent cause. The blood so brought up may be a mouthful or a cupful, either pure or mixed with salivary expectoration, and without previous or present disorder of health.

In *females* the blood-spitting may occur at or near a menstrual period, which it may retard or replace, when it is called vicarious. There is no excitement of pulse, and no fever, the temperature remaining normal. When examined, there may be no morbid physical signs in lung or heart, and the general health may be apparently good. There is a liability to other hæmorrhages, as hæmatemesis or hæmaturia, and it is remarkable that other members of the family will be found subject to similar disorders. These cases are notoriously short-lived, and are obviously ineligible for Assurance purposes.

189. The existence of *aneurism* as a cause of blood-spitting must not be forgotten, and a careful examination of the chest should be made.

The following signs should be looked for:—

(1) *Dulness* at any unusual part of the chest,

but especially at the upper part of the sternum. A dulness, even slight in character and extent, in this region, and not occupying only that portion of the chest where the lungs are situate, but central or slightly to the right or left of the sternum, is very suspicious.

(2) Undue prominence of the chest-walls at the same region.

(3) Undue conduction of the heart sounds, with or without murmurs, at the seat of dulness.

(4) Impulse at this spot, even distant or obscure.

(5) Alterations in the volume of the radial pulse.

(6) Changes in the tone of voice, and cough, showing pressure on the recurrent nerve or larynx.

(7) Distension of the jugulars or of the external veins on the surface of the chest, evidencing pressure on the deep venous trunks.

(8) The existence of tubular breath sounds or voice over a portion of lung at the upper and back part of the chest, indicating pressure.

(9) Difficulty in swallowing.

(10) An inequality in the intensity of the breath sounds over one lung as compared to the other.

190. Any one of these signs is suspicious, but the concurrence of two or more is almost confirmatory of the existence of some tumour in the mediastinum, probably aneurism. Such cases are of course not insurable.

191. The question whether a *single blood-spitting in early life*, not traceable to local disease of heart or lungs, nor to injury, and without the evidence of hæmophilia, is ever afterwards to exclude a proposer from the benefits of Life Assurance on any terms, is frequently before the Medical Examiner. He will, of course, proceed by examination to exclude all the known causes of hæmoptysis, and as years will have elapsed since the occurrence, he will not find any traces of organic defect. We are of opinion that such cases are not to be peremptorily excluded, and that if the family history be good, the personal health and habits undeniable, and the age advanced to 35 or more, the life may be accepted with a moderate addition to the premium. In earlier life a suspicion of the possibility of phthisis in a latent form will no doubt be present to the Examiner, but we consider that he will be safe in accepting it under the conditions of age, personal health, and family history above laid down.

# CHAPTER X.

## EXAMINATION OF CHEST.

192. The normal and healthy chest need not be minutely described for our purpose, but certain measurements, although not strictly applicable to every case, will give a fair idea of the standard of health.

The measurements should always be taken by a tape at the level of the sixth rib. They will be found to vary considerably in different individuals, *Walshe* having given 33 inches as a fair average in the adult, and *Sieveking* 38 inches.

*Douglas Powell* remarks that the mobility of the chest is of more importance than its mere size, as it affords a better indication of vital capacity. In the healthy adult the difference between extreme inspiration and extreme expiration should not be much less than two inches as measured by the tape at the level of the nipples. The difference should be equally divided between the two sides, a slight excess in favour of the right side being of no account.

By the deepest expiration following a full inspiration a healthy man of average build can expel from 200 to 250 cubic inches of air, which represent the *vital capacity* of the individual, leaving still behind in the lungs a certain amount of residual air which cannot be removed by any expiratory effort.

These facts were originally worked out by *Hutchinson* by means of the "Spirometer," and his investigations show that every inch in stature above

five feet should add eight inches to the vital capacity.

As this instrument is not commonly met with in Assurance offices, we only subjoin his results, and we have added to it a table of chest measurements given by *Allen* of New York, which is sufficiently accurate for our purposes.

| Height. | Vital Capacity. (*Hutchinson.*) | Circumference of Chest. *Medium.* |
|---|---|---|
| ft. in. ft. in. | Cubic inches. | Inches. |
| 5 0 to 5 1 | 174 | 34 |
| 5 1 „ 5 2 | 177 | 35 |
| 5 2 „ 5 3 | 189 | 35½ |
| 5 3 „ 5 4 | 193 | 36 |
| 5 4 „ 5 5 | 201 | 37 |
| 5 5 „ 5 6 | 214 | 37½ |
| 5 6 „ 5 7 | 229 | 38 |
| 5 7 „ 5 8 | 228 | 38½ |
| 5 8 „ 5 9 | 237 | 39 |
| 5 9 „ 5 10 | 246 | 39½ |
| 5 10 „ 5 11 | 247 | 40 |
| 5 11 „ 6 0 | 259 | 40, 41 |

## PHTHISIS.

193. The great prevalence of this disease renders its study from an Assurance point of view of the highest value. According to the Registrar-General, one death in every eight is due to this cause.

For our purpose the *age* at which it is most prevalent has an especial value, and it may be stated that phthisis may occur at all periods of life, but attaches itself remarkably to the age of growth and to that of decay.

194. *Hereditary influence* manifests itself most in the early periods of life, under 20, but is not extinguished even in the latest. The Assurance rule appears to be that persons hereditarily disposed are safe after 45 years of age, but although the greatest amount of danger is passed at this age, many cases occur and some mortality prevails in more advanced life.

195. *Brinton* considered that at 40 half the danger from phthisis is over, and at 50 three-fourths of the danger in males and four-fifths in females.

196. *Christison* gives the number of deaths from phthisis in persons selected for Assurance in the Scottish Widows' Office as 48 per cent. between 30 and 40, and 22 per cent. between 40 and 50 years of age. In *London*, in 1845, 3,624 males died of phthisis, of whom 36 per cent. were above 40, and 15 per cent. were above 50.

In the *Standard* Office, of lives accepted when over 40 years of age, 5 per cent. died of phthisis; and of those accepted after 50, 2 per cent.

197. It would thus appear that as an influencing cause:

Heredity strikes in early life.
" is much diminished after 45.
" is probably not extinguished till 70.

198. We would add that the disease becomes slower in progress as age advances after 40.

199. It is thus evident that the age at which Life Assurance is most ordinarily effected is not the age

at which phthisis is most prevalent and fatal, which from the largest figures yet collected (*Brompton Hospital Reports*) is from 20 to 30 years of age.

200. In every case presenting for examination, the Medical Reporter will not fail to regard not only the family history of proposer, but his *personal appearance, conformation,* and *weight.*

There is no doubt that the subjects of phthisis, and also those likely to become its victims, are commonly persons of spare and delicate appearance, and of light weight for their height. In such persons the size, capacity, and shape of the chest should be carefully regarded. The chest is narrow and long, and the antero-posterior measurement or depth deficient. The front wall is flat and its movements shallow. Posteriorly, the ribs want roundness, and the scapulæ often stand out, giving the winged or "alar" appearance as it has been called. The shoulders, deltoids, and muscles of the arm and forearm are but poorly developed, and the fingers are spare, long, and tapering. The skin is thin and delicate, not commonly freckled. The hair is silky and wants crispness. The face is of the long or oval variety, the malæ prominent, the lips may be anæmic or flabby. The whole muscular system is flabby and ill-developed, and the general impression conveyed by the individual is that he wants power, although he may have an expression of intellect and sensibility, the latter indeed in excess. The whole description may be summed up in the expression *general delicacy.*

201. The value and meaning of this in forming an

estimate of the powers of life, is that in such individuals there is but little latent vital resistance to disease of any kind, and it has been observed that such persons are likely to fall into phthisis, especially if any hereditary predisposition to that disease exist. There is no reserve of resisting power to adverse influences, and the likelihood of survival to the expectation of life according to their age is thereby lessened.

202. It must be observed, however, that *mere smallness of figure* is not to be reckoned as delicacy. It is, on the contrary, well known that the hardest work is best done and the greatest power of endurance is manifested by persons of light build. It has been found in military service that light infantry does the work, and exhibits under adverse circumstances of prolonged fatigue, insufficient food, and loss of rest, much greater powers than heavy troops selected for their weight and muscularity. And so it is in the various work of life: the hardy, small man is generally to the front and lasts longest. The question, then, of delicacy of appearance must be regarded from the indications we have given rather than from absolute deficiency of weight. If the subject of examination be well formed, have a firm muscular system, and a general expression of activity and vigour, we need not fear to accept him.

203. In the delicate class of persons we have described it will, however, be very necessary to inquire with great care into the family history and former ailments of proposer, as well as to submit him to a most careful physical examination.

204. The earliest *symptom* of phthisis is probably progressive loss of flesh.

The earliest *physical signs* may be thus enumerated :—

*Dulness of percussion* note on or under one clavicle, or on the spine of the scapula.

*Diminution* in the movements on expansion of the anterior part of the chest on either side.

Diminution in *intensity* of the inspiratory breath sounds.

*Prolongation of the expiratory breath sounds* on one side.

*Harshness* of breath sounds on one side.

A *bronchial* character of breath sound ; or

*Increased resonance* of voice sounds in subclavian or supraspinous region.

The presence of any one of these physical signs leads to suspicion of deposit in the lung, but if more than one be evident it is beyond doubt that disease exists. There is already some thickening of lung tissue from tubercular, inflammatory, or other deposit, and the proposal should be declined.

205. It may happen that such physical signs have been observed in one lung for several consecutive years, but this is only evidence that the disease is persistently there, and as we know that such cases eventually fall into actual consumption, they cannot be accepted on any terms for Life Assurance.

206. *The second stage of phthisis*, easily recognisable by the signs of crepitation and generally of dulness of percussion note, is of course to be declined. These signs are generally manifest over a more or less extended space at the apex of one lung.

207. We must mention here that in our experience as described elsewhere,* cases occasionally present with crepitant sounds spread over some extent of lung on one side, without the physical conditions evidencing much consolidation of lung tissue (dulness, conduction of voice sounds, bronchial breath sounds, and flattening of chest walls), and not exhibiting the ordinary symptoms of phthisis, as wasting and fever.

It is probable that in such cases the deposit in the lung not being grouped in masses in any one spot of pulmonary tissue, is spread over the surface of the lung, and does not occupy its entire thickness as in ordinary phthisis.

208. These remarkable cases exhibit but slight tendency to progressive change, and often last for many years without manifest injury to health. We have observations of many such, extending over 15 or 20 years, and we know of one case which we rejected twelve years previously for Life Assurance which appeared again without any symptoms of ill health, but with precisely the same physical signs of diffused crepitation. In this instance, as there was no hereditary predisposition, and the health was unimpaired, we were enabled to accept the proposer, who was 35 years of age, for a short term at a

* "Elements of Prognosis in Consumption."

considerably advanced premium. This form of disease is commonly seen in persons of large chest.

We cannot lay down any assurance rule for such, but observation of large numbers of cases of phthisis enables us to state, that *many of them outlive all expectation, and if the varieties of that disease were more minutely studied, it might be possible to find rates and methods of assurance which should include them.*

209. *The third stage of phthisis*, or cavity in the lung, is often also very chronic. It is recognisable by the known signs of cavernous blowing and voice sounds, generally accompanied by gurgling on cough, and in chronic cases producing considerable alteration of chest walls, displacement of the heart upwards—if on the left side—and increased compensatory volume of the opposite lung. We cannot recommend such cases for insurance, although if the cavity be single and limited they often attain to great chronicity.

210. A form of very chronic alterations in the lung structure has of late years been described as *fibroid phthisis.*

As a result of slow inflammatory, rather than of tubercular changes in the lung and the pleura, the lung tissue undergoes fibrous alterations, is thickened and eventually contracted in volume, while the air tubes become in parts dilated (bronchiectasis). They are recognised by contraction of the affected side, and displacement of heart as a result, by dulness and the absence of pure breath sounds, and by the evidences of cavity in parts.

211. These cases are very slow to break up, and do not always die of phthisis. They are little likely to offer for life assurance, yet it might be possible to assign a rate for a short term of life, as they are among the most prolonged of chest affections.

### EMPHYSEMA.

212. Individuals often propose whose lungs present the physical signs of emphysema, especially at the bases, and in marked cases the chest is rounded and barrel-shaped at the back and sides. The characteristic signs of deficiency of breath sounds with clear percussion note will indicate this condition. The proposer may or may not be the subject of fits of asthma, but the breath is always short on exertion. The co-existence of bronchitis, shown by râles of the dry-sonorous or mucous character, most marked with the expiration, is often to be detected, and eventually few advanced cases of emphysema of the lung remain unassociated with heart failure.

213. Cases of this kind, excepting those which present *heart symptoms*, may be accepted with an addition to the premium, the amount of which will of course depend on the nature of the affection, its mildness or severity, the rarity of the attacks, and the amount of loss of elasticity in the lungs. With advancing age the liabilities increase, and this is one of the cases where the premium ought to be paid up before the proposer has arrived much beyond middle life.

214. A short occasional attack of *asthma*, without

the physical signs of emphysema may not materially vitiate a life. An inherited form of asthma often is much relieved or even disappears at the age of puberty, but such are seldom the subjects of life assurance.

215. Persons who are the subjects of *asthma* do not commonly fall into consumption, and the barrel-shaped build of emphysema is rarely seen in conjunction with any form of phthisis in the same individual.

216. The attributed "long life" of the asthmatical is not strictly true, but rather indicates the tendency of this state to become chronic. The liabilities to attacks of congestion and bronchitis, and the likelihood of heart disease (dilatation) supervening in old cases, diminish the value of the life.

### BRONCHITIS.

217. *Bronchitis*, in its acute form, is rarely a disease of the young, and when a person under twenty-five is stated to have died of it, the medical examiner has always reason to suspect phthisis.

218. A liability to *bronchial attacks* of more or less severity in youth, manifests a delicacy of the air passages, and is often found in individuals of a phthisical, gouty, or syphilitic family, although the proposer may not himself have phthisis.

219. *Chronic bronchitis* in the elderly is commonly found in emphysematous cases. It is indicated by the various râles in the minute tubes. The liability to winter attacks, and to the gradual supervention of

changes in the air vesicles and chambers of the heart, renders such lives very precarious.

220. In all chronic disorders of the air passages we have, however, to consider the possibility of *change of air* and residence in mild climates for the winter which the possession of wealth enables some proposers to obtain; and there can be no doubt that by such means life is prolonged, and the dangers of congestive attacks minimised.

221. Such cases might be assured with a considerable addition to the premium, and for a short term. The charges which a correct appreciation of the great risks undergone by such lives would, however, be prohibitive in most cases.

DISEASES OF THE PLEURA, EFFUSIONS, ETC.

222. It is little likely that acute pleurisy, or its immediate result, effusion, will come before the examiner for life assurance. But after the convalescence from such attacks the life is assurable.

223. *A contracted side* from the absorption of a former effusion, with slight dulness and lessened or distant breath sounds at the base, need not invalidate the life.

224. Neither should the evidence of *paracentesis* for removal of the fluid cause us to decline the proposal, even although the lung had not expanded to the full, and so occupied its former exact limits. If we are quite clear that there is no phthisis, and no near heredity to it, and if the general health has been entirely restored after the acute attack, and

proposer has regained his usual weight and vigour, we might accept such a case. As a proclivity to serous inflammation has been manifested by the attack itself, we should to persons under 35 make a considerable addition.

225. We would note that the existence of *slight crumpling sounds* manifestly in the pleura at the base of the affected side do not necessitate *per se* the rejection of a life. Such physical sign often indicates the site of a cured pleurisy.

## CHAPTER XI.

### DIGESTIVE TRACT.

226. The *tongue*, *fauces*, and *pharynx*, should in all cases be carefully examined. The tongue should be clean, smooth, and not tremulous. It should be free from ulcerations and cracks, and present no hard elevations of surface. Streaks of hard, raised greyish epithelium are often the commencement of cancer. The salivary glands, lying under and along the jaw, should be free from enlargements or hardness, and the tongue itself not bearing the marks of the teeth at the sides. Evidence of former ulcerations of the fauces should be looked for, and syphilis suspected if such be present.

227. The *nostrils* should be free from obstruction, and the voice not nasal. Should it be so the bones and palate should be examined for syphilitic manifestations, and the history of such carefully elicited from the proposer.

The diseases of *the tongue* are few, but their import for life assurance is evil, and if any are present which cannot be accounted for by local disorder, the proposal should be declined.

228. *Dyspepsia*, if not found in its more severe forms, need not exclude the life from acceptance. Acknowledged symptoms of vomiting after food should lead us to examine over the stomach by palpation and percussion, as tumour of the pylorus or dilatation

of the stomach may thus be ascertained, and if found to exist, will justify rejection of the life.

### LIVER AND SPLEEN.

229. The *abdomen* should be examined in every case, without the dress, and any enlargements detected. The liver should not come below the ribs, and generally speaking, a breadth of two fingers will represent the normal dulness from the lower ribs upwards.

230. Splenic enlargements should also be looked for under the left lower ribs, and if any such be made out, a careful inquiry as to malarious fevers should follow, and the effect of residence in foreign hot climates. If after a residence in India, or other such climates, an enlargement of either liver or spleen is detected, even although there have been no symptoms of illness for many years, and the proposer has resided in England, a considerable addition should be made to the premium, and habits especially inquired into.

*Ague.*—The chronic results of malaria acquired in India or other climates are most manifest in such enlargements, but certain minor results of residence in malarious climates are often brought under our notice. Such are seen in a liability of all ailments to assume an intermittent form, and on exposure to cold a mimic kind of ague, with intermissions, will remind the old Indian of his more severe attacks abroad. They will, however, gradually disappear during a prolonged residence in England, and provided that there be no organic

alterations may be disregarded so long as an otherwise vigorous state of health be maintained.

231. *Tumour of the liver*, or inequalities in its surface when enlarged, may mean cancer, cirrhosis, or hydatids, and such cases should always be declined.

232. *Mesenteric tumours*, fibroid, scrofulous, or malignant, are not admissible.

Hardness in right iliac fossa, especially with a history of typhlitis or perityphlitis, ~~are~~ is also inadmissible.

233. *Hæmatemesis*, if acknowledged, is disqualifying for life assurance. It may be due to ulcer of the stomach, engorgement of the portal system, and cirrhosis of liver, or cancer.

234. Any of the following affections, if acknowledged to, or known to have existed in the proposer, should be disqualifying :—

*Hæmatemesis.*
*Gastralgia with vomiting.*
*Hydatid cysts.*
*Obstruction of bowels.*
*Ascites.*

235. There are cases of hæmatemesis of a *vicarious* character in the female, or the result of direct injury or strain from athletic exertions, which might be accepted, but they are rare, and when presented to the examiner should be most carefully sifted, and only accepted after years of perfect health have elapsed.

236. *Jaundice* of former occurrence, if the attacks have been slight, and not traceable to liver disease, would not forbid acceptance.

Biliary colic (gall stones), if the attacks have been severe and recent, would prohibit acceptance.

Former attacks of typhlitis or perityphlitis should disqualify, unless after some years, when an addition to the premium should be made.

237. The secondary effects of *Dysentery* are found in liver disease and the occasional occurrence of obstruction of the bowels from cicatrisation of ulcers. After some years' residence in a temperate climate without any such symptoms, a proposer may be accepted, but if he return to a hot climate an extra should be charged.

238. *Rectum.*—All disorders of the rectum are serious, excepting hæmorrhoids of the simple kind.

239. *Hæmorrhoids* need not disqualify a proposer, unless they be of a severe form, or have returned after operation, or presently call for surgical interference. Also, there should be no symptoms of liver disorder, with which hæmorrhoids are frequently associated.

*Fistula* successfully cured by operation in a person otherwise healthy, would not, after an interval of several years, be a bar to acceptance. If actually existing, the case should be deferred. It is well to remember the frequent co-existence of this affection with chronic phthisis. A careful examination of the chest will therefore be necessary.

## CHAPTER XII.

### GENITO-URINARY ORGANS.

240. Disorders of these organs are among the most important which affect the value of lives. They are often so insidious as to baffle a careful examiner, as persons in a state of disease will present the appearance of perfect health. It is therefore imperatively necessary that the urine should be tested chemically in every instance. This rule was formerly not adhered to, and many disasters to life offices occurred from the neglect of this precaution. Even at the present day it is far from universal in England, and the great Continental offices rarely enjoin its practice on their medical examiners. It is notorious that a man may have glycosuria or albuminuria, and yet neither know it himself nor carry in his personal appearance any evidence of the disorder. Offices therefore cannot be too strict in exacting this chemical, and, if need be, microscopical examination from their medical advisers. We will first consider some other affections.

241. *Hæmaturia* is always a serious affection from an assurance point of view. It may arise from the bladder or kidney. In the latter it is often due to calculous nephritis. When from the bladder it may arise from stone, or fungous, or cancerous disease. There are slight cases in which the urethra alone may have furnished the blood, but these can be recognised with care. Hæmoglobinuria need scarcely

be considered here, but it is often temporary or curable. In all which present for examination the urine should be examined for blood or albumen—for the former by the guaiacum test, or, better still, by the microscope, and the life should be declined if either be present. Cases of hæmaturia which have occurred many years previously, from which there has been perfect recovery, with perfectly good health and temperance, and which have not been reasonably traced to any nephritic cause or bladder disease, may be accepted with caution, and with some addition to the premium. But anything which argues kidney or bladder disease should influence the rejection of the life.

242. *Stone in the bladder*—if present, of course, forbids acceptance. Cases which have undergone successful operation years ago without any return of symptoms, and with unexceptionable personal health, and urine normal, might be accepted, the habits being satisfactory. It is as well in such cases to refer to the operating surgeon, and get his opinion on the present state of the case.

243. *Stricture of the urethra—enlarged prostate. Dysuria* due to either of these causes and existing to a considerable extent would vitiate a life proposal. But there are mild cases of stricture which get cured and are assurable, especially when occurring in earlier life. Diseases of the prostate causing obstruction are commonly found in advanced life, though very far from being its inevitable accompaniment; should the obstruction have been considerable and repeated

such lives are not safe, as being liable at any time to the necessity for serious operation and its possible consequences. They do not often present for assurance, and when they do will require the careful discrimination of the examiner and of the attending surgeon.

244. Simple *mucous discharges* from the urethra of a former date may be admitted when cured.

## SYPHILIS.

245. The effects of *syphilis* on the duration of life are very considerable, but the disease is to be regarded not only from the length of time which has elapsed since the last attack and its cure, but from the nature and degree of the symptoms.

246. *Berkeley Hill* divides his cases into the *curable* and *incurable.* The curable cases get well in two years; the incurable may last for an indefinite number of years. For two years a person may expect a return of the eruption on the cutaneous or mucous surfaces.

247. *Tertiary* affections generally appear about five years after the primary infection.

248. *Moxon* made 56 autopsies of persons who had died of visceral syphilis, and found the average age at death to be only 37 years.

249. *Cooper* considers that the activity of syphilis usually continues for two years before the poison subsides into quiescence.

250. His recommendation as to *marriage* is that there should be an interval of twelve months after the

last symptoms have disappeared before marriage be permitted.

251. The *assurance rules* may be stated thus:—

During the actual existence of any syphilitic disorder the proposal should be postponed.

252. If a proposer has had syphilis in the secondary forms, a small addition should be made to the premium, and the life should then only be accepted if two years have been passed since the latest symptom.

The medical attendant should also be consulted as to the nature of the symptoms, their duration, and the treatment adopted.

253. Those who have had internal syphilis, affecting the brain, cord, liver, lungs, kidneys, &c., should be rejected.

254. The persistence of the poison in an individual after marriage may be occasionally proved by the child of such marriage having been born dead, or others living with cutaneous or mucous forms of the disease. This evidence is, of course, most difficult to obtain for assurance purposes, but may sometimes be got at from the family attendant, and in proposals of importance such inquiries should be made.

255. *Albumen* is found in several chronic affections of the kidney and also in acute nephritis. It may be present also in the acute inflammatory affections, rheumatic fever, scarlatina, pneumonia, typhoid—but in such cases is temporary. It is not uncommon in pregnancy.

256. Acute albuminuria from cold or wet, or

excesses in drinking or food is more likely to recur than after scarlatina, which as a rule is less likely to recur. There are exceptions to this, however, and such cases must be treated exceptionally. Albumen in urine is usually more copious after food or exercise, therefore after breakfast or in the afternoon is a better time for testing.

The following are the ordinary forms of kidney disease indicated by the presence of albumen :—

257. (1) The *large white kidney*, in which there is abundant albumen; the urine ultimately becoming scanty, and dropsy supervening. Anasarca is marked, the face and integument becoming œdematous.

258. (2) *Contracted granular kidney*, common in gouty and arthritic persons. The urine is copious, with low specific gravity. Granular casts may appear before albumen, especially in gouty cases, and disappear in the intervals of gouty attacks; it is a common result of lead poisoning. There is high vascular tension and cardiac hypertrophy. Death commonly occurs from uræmia or cerebral hæmorrhage.

259. (3) *Amyloid or lardaceous kidney*, often found as a sequence to prolonged suppurations, diseases of joints and phthisis. All these cases are to be declined for life assurance.

260. *Albuminuria after scarlatina.* This acute nephritis may have occurred with all symptoms of severity, and subside without any ill effects. If it has taken place in youth, as is commonly the case, and the individual has grown up without any traces of kidney disease, the life may be accepted if the personal health, family history, and habits be unexceptionable.

261. *Nephritis with albuminuria*—the result of exposure to wet and cold, as in fishing, or sitting in wet clothes—need not be a bar to acceptance, if years have been passed in health without recurrence of the symptom.

262. *Albumen in health.*—This subject has received especial attention in late years, and it is undoubtedly true that it occurs in many persons without any other symptom of disordered health, and may so remain for years. The following statements by careful observers deserve attention.

263. *Sir Grainger Stewart* has found that the proportion of cases of albuminous urine found in presumably healthy persons is about 30 per cent. He examined 407 cases. It occurs more in adults than children. In all the maximum quantity was found after breakfast—in children 12 per cent. to 17 per cent.; in old men about 5 per cent.

264. Among 150 cases of various ailments presenting at the hospital, he found that 36 had albuminous urine. Of these, rather less than half had Bright's disease, which is the most common cause. Next to Bright's he found cardiac causes, and, less

frequently, certain digestive and nervous causes, and alcoholism. He is of opinion that bodily labour may induce albumen.

265. *Saundby* (1879), in 145 male out-patients presenting at the hospital, found albumen in 72 per cent. The albumen was at its maximum after breakfast—some had it only at that time. He knew of cases of post-scarlatinal nephritis with casts which had lasted for 20 years, and he has had many cases of simple albuminuria which he has observed without disorder of health for long periods up to 20 years.

266. The recently expressed opinions of *George Johnson*, who has had a very large experience of such cases, should have due weight.

He considers that the presence of albumen in the urine, though small in amount and occasionally intermittent, is always pathological.

That nearly all cases of acute nephritis pass through the stage of intermission; that is, the urine may exhibit no traces of albumen for long periods —even for years—yet eventually reappear, a fact which has an obvious bearing on life assurance.

He considers it proved that albumen may be abundantly present at one period of the twenty-four hours, and entirely absent at another. It is therefore necessary to test the urine not only after rest in bed and before breakfast, but also after food and exercise.

With regard to the question of albuminuria in life assurance he says: "No prudent medical officer would advise that a proposed assurer with a

trace of albumen in his urine should be accepted at the ordinary rate of premium."

267. *Turner* has examined 200 cases of lunatics, and found albumen in 40 per cent. The largest number were from 20 to 25 years of age, the next highest 65 to 70. It was most abundant after breakfast and before dinner, and in those who were engaged in bodily labour it was increased. These were not the subjects of any other disease, but appeared to be in perfect bodily health.

268. With these facts before us, which no doubt will be confirmed by more numerous observations, we must conclude that albuminuria as a single symptom should not, in all cases, be regarded as decisive against accepting a life.

We are disposed to advise the following rules for practice :—

269. Albuminuria formerly existing as a result of acute nephritis from cold or exposure, with an interval of perfect health for years, need not disqualify a proposer. The same may be said of scarlatina.

270. *Albuminuria* presently existing and known to have existed for years in persons of otherwise perfect health, and good family history, may be assured for a short period of say five years with an addition to the premium, and come up again for examination at the end of that period.

271. *Albuminuria* with any of the symptoms of *chronic Bright's disease,* with any alteration of cardiac sounds, or with gout, rheumatism, or any constitutional

affection, or any suspicion of intemperate habits should be declined.

TESTS.

272. Many tests for albumen have been proposed, and they appear to us to be valuable in the following order:—

*Pure nitric acid* half an inch deep in the bottom of a clean test tube, the urine to be poured gently on to the acid. A cloudiness will indicate a very small portion of albumen, which will be on the surface of the acid.

273. *Boiling* will produce cloudiness if albumen be present. If the cloudiness be due to phosphates only, a few drops of nitric acid will clear the solution.

Nitric acid will often produce white deposits in the urine of patients under the influence of copaiba or cubebs, but these are not produced by simple heating.

274. *Picric acid* will give a characteristic yellow cloudiness, but is not so reliable as the cold nitric acid test where the albumen is small in quantity.

275. *Carbolic acid.*—A few drops of a strong solution will turn albuminous urine milky.

276. *Alcohol, rectified*—as commonly sold—or *methylated spirit*, if allowed to trickle on the top of albuminous urine in a tube will cause a cloudiness. This is not affected by alkalinity of the urine.

277. *Casts* in the urine, whether *epithelial, hyaline, waxy, colloid*, or *amyloid*, are often found conjoined with albuminuria, and if present would confirm the

diagnosis of organic disease of the kidney. Such cases would of course be declined.

### GLYCOSURIA.

278. *Sugar* may be present in the urine without diabetes; that is, the symptoms of the latter—excessive quantity of urine, thirst, voracious appetite, wasting of the body, and a peculiar ethereal odour from the breath—may all be absent.

279. *Glycosuria* is often a temporary condition, and may disappear leaving no injury to the system, but it is always to be regarded with suspicion, and its presence alone should forbid acceptance of the life. The conditions with which it is associated without diabetes are occasionally pregnancy, the puerperal state, and lactation; and also in obese persons, gross feeders, after traumatic lesions of the nervous system, and eminently in the gouty habit. In this latter state it may, like eczema and bronchitis, alternate with the acute gouty access.

280. *Diabetes* is a permanent, but *glycosuria* may be a temporary condition. The latter in our experience is often present in individuals who have no suspicion of its existence, and therefore appear to be and feel themselves in perfect health. This fact should render an examination of the urine peremptory in all cases of proposed assurance.

281. *Diabetes* caused 55 deaths to one million of the population in 1885, and has been on the increase for some years.

282. The mortality from this disease *increases*

*with age* up to 60 or 70 years. Males are twice as liable as females.

283. The Registrar-General notices a peculiar feature in its localisation, as it is much more prevalent in the Eastern coast than the Western; in England and Wales rather than in Scotland; and Ireland is the most free from it.

284. It is difficult to measure its duration, as dietetic measures, if strictly carried out, can much retard its progress, but the prognosis is, on the whole, bad; and the liability to phthisis, cerebral affections, anthrax, and other fatal complications, must exclude the subjects of this affection from a participation in life assurance.

285. *Glycosuria*, or the presence of sugar in the urine, without other symptoms, will forbid the acceptance of a life while it exists, but as it is often temporary a calculated addition might be made to the premium if all traces of sugar have disappeared and some years have elapsed since the last attack. Its association with gout should be remembered, and the absence of any heredity to this disease will greatly strengthen the case for acceptance.

### TESTS.

286. The urine in *Glycosuria* is pale, and its quantity increased. The specific gravity ranges from 1,028 to 1,040, or even 1,060. A high specific gravity, say up to 1,030, while it would lead us to suspect the presence of sugar, may exist without it.

287. *Specific gravity of urine* is a variable condition,

and it may in health be considered to range from 1,005 to 1,030. It depends entirely on the quantity of solids contained, and taken alone (*i.e.*, without a chemical examination) is no evidence of sugar. It varies with the hour of the day, the state of the skin, and other secretions. The urine will be concentrated after sweating—as in a Turkish bath; also after meals, and will be diluted or have lowered specific gravity by a dry state of skin, by abstinence, or the full ingestion of fluids.

288. In glycosuria the quantity of urea is also increased.

TESTS FOR SUGAR.

289. *Fehling's Solution* should be used when fresh, as it decomposes by keeping, and will cause a greenish precipitate in urine by throwing down the urates. About one drachm should be placed in a clean test tube and boiled. Then add a small quantity of urine, and boil. The change to a bright orange-red begins soon at the top, and rapidly spreads down through the fluid, precipitating the oxide of copper. Discolorations produced two or three minutes later are not reliable.

MOORE'S TEST.

290. Equal parts of urine and liquor potassæ are boiled together in a test tube. When coming near the boiling point, if sugar be present, the fluid turns a pale-straw colour, which deepens to a fine claret. The change takes place in the hottest part of the tube first.

TROMMER'S TEST.

291. Equal parts of urine, liquor potassæ, and of a solution of sulphate of copper (10 grains to ounce) are mixed in a test tube, and shaken till they clear. Upon boiling, the clear mixture suddenly becomes opaque, with a fine orange-red precipitate of sub-oxide of copper, which rapidly darkens to brown.

292. Of these *Fehling's* and *Trommer's* are the readiest. The tests by the polariscope and fermentation are not generally applicable to assurance cases.

293. *Pus.*—The urine is alkaline and viscous, and pus may be detected by liquor potassæ, or by the microscope. As serious disease of the kidneys or bladder is so indicated, all such cases should be declined. In bladder affections age is a main factor.

If only a slight *cystitis* has existed, and that a long time before, and the proposer is under 60, the life might be accepted, the urine being normal.

294. *Phosphates* in excess, recognisable by a turbid state of urine on boiling, and entirely redissolved by the addition of nitric or acetic acid, are often met with in health. The excess seems to depend on nervous waste; and the commonly exciting causes are anxiety and over-application to business. If the health be otherwise good, their presence in the urine is no obstacle to acceptance at the ordinary rate.

295. *Bile* in the urine is shown by allowing a few drops of urine and nitric acid, when placed separately on a plate, to run together, when at the line of contact a play of colours, from green, violet, and blue,

to red, will be seen. Its presence is an indication of some alteration in the liver functions, from which aspect it must be further investigated. Such cases should be adjourned till a healthy state is restored.

296. *Disease of the testicle* may be either tubercular, strumous, or malignant, and disqualifies for assurance.

*Simple orchitis*, if cured for some time past and if the cause no longer exists, may be accepted.

297. *Hydrocele*, when cured by operation, should not prevent acceptance.

298. *Varicocele* also may be regarded as harmless.

### FEMALE ORGANS.

299. *Metritis*, *pelvic inflammation*, or *ovarian disease.* Women who have been the subjects of any of these of a severe character are not admissible. Persons cured of ovarian disease by operation might be accepted after some years.

300. Women who have had repeated *abortions*, puerperal hæmorrhages, eclampsia, or a necessity for obstetrical operations, are not eligible, unless the menopause has been passed favourably.

301. During *a first pregnancy* it is well to defer assurance till after a safe confinement. Some offices, however, charge one per cent. extra for that year only. We recommend the former course. Subsequent pregnancies, the first labour having been favourable, do not imply any appreciable risk, and individuals under such circumstances are generally accepted at the ordinary rate, although it would be doubtless better to defer them.

302. *Uterine irregularities* in the unmarried rarely come before us. When they do, the case must be judged by the state of the general health.

303. The *Menopause* is a period of anxiety to most women, as changes in health for better or for worse are generally developed at that time. But in the vast majority it is passed without any permanent ill-effects, and although a very strict examination of the general health should be made in persons approaching the climacteric, it would be unwise to reject such an applicant if the general condition be good. No rule can be laid down, and each case must be dealt with separately.

304. *Lactation*, in healthy women, is no bar to acceptance.

305. Although the average duration of life among women is longer than among men, the incidence of mortality does not tell in favour of the former until they have passed middle life, and the experience of Life Assurance Companies shows that an extra charge of 5s. per cent. must be imposed until age 50 is attained.

306. The following table by Matthews Duncan shows the comparative mortality of first and subsequent labours.

| No. of Primi paræ. | No. of Deaths. | Or one in every | No. of Multiparæ. | No. of Deaths. | Or one in every |
|---|---|---|---|---|---|
| 3,722 | 50 | 74 | 12,671 | 103 | 123 |

## CHAPTER XIII.

### LESIONS OF THE NERVOUS SYSTEM

307. May be threatened or existing, indicating disorder of the nerve centres—brain, and spinal cord, or sympathetic system. The effects of alcoholism we have already spoken of, and the symptoms of trembling of hands, lips, and tongue, should always be looked for. To detect nervous disorder the examiner should be on the look-out for the following symptoms, or any of them:—Slowness of speech, sentences broken off or uncertain, deficiency of memory, agitated lips, tremulous tongue, or tongue drawn to one side; inequality of pupils; diplopia, or double sight; a step defective in balance. This group of symptoms may indicate the approach of general paralysis.

308. *Locomotor ataxy* is shown by inequality of steps, partial paralysis of muscles, lightning pains, general loss of power, without impairment of intellect. The proposer cannot walk straight with his eyes shut, and the knee reflex is lost.

309. *Cerebral softening* may be indicated by embarrassment of speech, loss of memory, and the features lack expression, or may be drawn to one side.

### PARALYSIS.

310. *Hemiplegia*, or loss of power of one side,
*Paraplegia*, or loss of power of both lower limbs, and

*Aphasia*, in any of their forms, need not be considered as they entirely disqualify a proposer.

311. *Local paralysis* of the motor muscles of the eyeball leads to suspicions of brain disease, also ptosis of one or both eyelids, unless it has existed (in a partial degree) from childhood, and with unimpaired health.

312. *Paralysis of the facial nerve*, the *portio dura* of the seventh—called "*Bell's*"—is, if without other symptoms, generally a local lesion caused by exposure to cold draughts of air, or similar causes. It consists in impairment of the motor nerve power only in that portion from its bony canal behind the ear to its ultimate distribution to one side of the face, not crossing the middle line. Within these limits it is harmless to life, and recoverable, but if associated with loss of sensibility or any symptoms showing that other cerebral nerves are engaged, its existence is very serious. Such are difficulties of utterance or swallowing, alteration of tongue movements, or of taste, recent strabismus or changes in the pupils which would indicate some deep-seated affection of the brain involving the 5th or 3rd or other nerves.

Simple "*Bell's*" *paralysis* would then, if cured, be no bar to acceptance for assurance, but the other forms alluded to forbid acceptance.

Local paralysis of the deltoid muscle, or of the brachial plexus, without other symptoms, is not of importance.

313. *Chorea* is generally found as the result of the rheumatic constitution, or of acute rheumatism in early

life. It is most common in females. If all symptoms have disappeared for years, and the proposer has got to middle life, and has had no rheumatic or heart affection, the case might be considered with an extra.

314. *Writer's paralysis*, when cured, is also of local signification only.

315. *Paralysis from lead* (painter's paralysis) is serious, not alone from the fallen wrist, but that the system has been impregnated with lead. The characteristic blue line on the gums should always be looked for, and the liability to albuminuria in this class of case should never be forgotten. On the whole, the subjects of *lead poisoning* must be considered as unfit for acceptance.

316. *Epilepsy.*—The hereditary nature of this affection has been discussed, and rules laid down for our guidance in such cases.

Where the proposer has had epilepsy, not of hereditary origin, the nature and frequency of the attacks and their apparent cause must be strictly investigated. There is a mild form appearing in early life which has been generally due to causes which can be traced, as overwork, too close application to study, and the like. This form may be either the "*petit mal*" occasionally repeated, with lessening intervals as habits are reformed, or the more grave malady. We have many instances of complete recovery from the former, and if years have elapsed without its recurrence, and the proposer has passed 30, and has engaged in the active work of life, without symptoms of nervous disorder, and especially if he be abstinent from stimu-

lants, or strictly moderate in their use, the life may be accepted with a small addition, but it will require all the care and tact of a skilled examiner to discriminate such.

317. The more severe form of *epilepsy* must forbid acceptance, unless indeed 15 or 20 years have been passed in perfect health since the last attack, and even then an addition should be made to the life.

318. *Mania* in the proposer, even when cured, forbids acceptance on any terms, as the probabilities of brain disease occurring in later life are very great.

319. *Hysteria*, in either sex, is another form of nervous disturbance which assurance offices are better without. Its cause, which may be inherited and inherent, or induced by intemperance, will always remain obscure to the examiner.

320. *Neuralgias* of branches of the 5th nerve may generally be accepted, but they may be associated with cerebral symptoms, or be the result of syphilis and exostosis, and are in such cases disqualifying.

321. *Headaches* of severe character, especially if nocturnal, may also have syphilitic origin.

322. *Vertigo* of the severe kind, associated with the symptoms of *Menière's* disease, and ending in deafness, are dependent on alterations in the labyrinth of the ear, and would disqualify. But *Vertigo* may be temporary and dependent on stomach disorder. When associated with gout it may be of serious import.

323. *Trembling* of the hands, with constant inability

to write steadily, may arise from the abuse of tobacco or tea, most commonly the former. It is also a common symptom of alcoholism. In such cases one would expect the tongue to be also tremulous. It may, however, be the result of paralysis agitans, or of some grave disorder of the nerve centres, and all such cases should be declined.

324. *Ear—Otorrhœa.*—All chronic discharges from the ear are to be regarded with great suspicion, whether originating in acute zymotic affections, as measles, scarlatina, or diphtheria, or as a result of exposure to cold. The proposer should be examined as to the integrity of the tympanum by Valsalva's test (*blowing while the mouth and nostrils are kept closed*), as to the nature of the discharge and its freedom from fetor, and the presence of tenderness over the mastoid. Should such tenderness and fetor co-exist with perforation of the tympanum, the case should be declined, the risk of extension to the labyrinth and mastoid cells, with ultimate cerebral mischief, being well understood. It may be possible to accept a case where the tympanum is sound and the discharge slight or occasional, and free from fetor, if such symptoms have lasted for years without injury to health. But an addition of 7 to 10 years should be made.

*Chronic deafness*, more or less complete, without evidence of disease in the outer or middle ear, should be traced to its cause, and the presence of any central nervous symptoms looked for.

In *Deafmutism* (*congenital*) cases it is customary to make a small addition to the premium.

## CHAPTER XIV.

### OBESITY—LEANNESS—WEIGHT.

325. The relative proportion of weight to height is to be regarded as important in estimating the probabilities of future disease in the proposer.

In estimating over-fatness it is necessary to ascertain what parts of the figure are so developed. If the chest and shoulders be large and the abdomen moderate in circumference, the condition is of less importance than if, in a corpulent person, the abdomen were large and pendulous.

326. Fatness of limbs is also to be considered in relation to weight, and the mobility and general activity of the figure to be set off against size.

In stout persons, therefore, the height, weight, and circumference of chest, abdomen, and limbs, should be given. Some offices have a table printed in their form of medical report to guide the examiner, and we append one (*see Par.* 347) which is sufficiently accurate for such purposes. A margin is of course to be allowed both above and below these figures, within which the proposer may be considered as average, or nearly so.

327. Flabbiness or firmness of tissues is also to be ascertained, and the habits as regards exercise, food, and stimulants, to be critically inquired after.

328. Of course *age* will have to be taken into consideration. If a man be excessively stout at 20 to 30, and tends to increase, he will probably be much in excess of his present weight at 40 to 50, when degeneration of organs may be likely to set in.

The family tendency to stoutness should also be considered.

329. The *plethoric* (full-blooded) condition is popularly supposed to prevail in the obese, but the fact is generally the reverse. The over-stout are generally flabby, often pale and with slow and feeble pulse, and the heart action is weak and its sounds ill pronounced. The dangers of obesity lie in the direction of *weak heart* and its sequences, or of ultimate fatty degeneration of the muscular fibre of that organ. In this latter state the heart muscles are replaced by fat or oil, the muscular fibre disappearing under the microscope and a chain of oil globules appearing in their place. The dangers in such a case are slowness of action and failure, or even rupture, of the remaining fibres.

330. Another form of *fatty heart* consists in an excessive deposit of fat on and around the heart itself, which issues in a train of events different from the former, but is not the less ultimately fatal.

331. It has been found that in a large proportion of these cases the fatty degeneration has affected other organs as well as the heart, the liver especially, while atheromatous alterations in the coats of the arteries also occur, and lead the way to their rupture,

attended by hæmorrhages. It is from this cause that many apoplexies occur.

332. The obese are also worse subjects for accidents and fevers than are the spare and muscular. Their power of recovery, owing to a weak state of circulation and consequent lowered vitality, is considerably less than in persons of the latter build.

333. For these reasons it is manifest that the obese can scarcely be considered as safe subjects for life assurance, and if accepted in some peculiar and exceptional cases, a considerable addition should be made to the premium.

334. The exceptions should include persons who are proved to be extremely moderate in eating and drinking of all fluids, especially stimulants, who are mentally and bodily active, and the health of whose organs has been tested by a searching examination. The gouty, full livers, large feeders, who take little exercise, and whose occupation is sedentary, should be rigorously excluded.

335. In investigating such cases from written reports we should disregard the common attestation of friends and agents that proposer is the "picture of health," a eulogy often applied to persons of the exact build which we have described, but whose habits of life and geniality of humour secure them golden opinions. All such cases should be weighed and measured physically—and by ourselves, intellectually—and their presumed excess of health gauged by physiological rules.

336. The state called *plethora* is often confused

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blooded, and plethoric, are the most liable to apoplexy, for indeed apoplexy rarely occurs from a rush of blood to the brain. In the majority of cases it is the result of brittle blood-vessels which have undergone degeneration and lost their elasticity, and this disease in the coats of the arteries has for a long time silently preceded the fatal oozing of blood into the brain structure.

340. Another cause is the carriage of a clot of blood which has become detached from a thickened valve of the heart and lodged in one of the cerebral vessels which has been too small to permit its passage. In either case a somewhat sudden seizure has occurred—and a resulting paralysis—but in neither of them had a "short neck" anything to say to the attack, which in the first case was caused by a leakage from a broken pipe, and in the other by a primary disease of a valve of the heart.

341. We do not forget that there is an occasional apoplexy, from sudden excitement, violent exertions, or the like, and it is more likely to occur in the full-blooded, but it is a rare form of disease.

342. An exudation of serum into the cavities or on the surface of the brain is another form (serous apoplexy), but it is not especially associated with the plethoric short neck, and is itself more commonly the result of fatty degeneration of the heart and vessels.

343. The existence of excessive *leanness* in a proposer should be carefully scrutinised to ascertain the cause. It may be the result of phthisis, diabetes, or of various wasting diseases, but when on examination

it appears that these causes may be excluded, there remains the fact that, if the wasting approach emaciation, there is some deep-seated error of nutrition, the existence of which *per se* is prejudicial to the life. We are aware that such cases are rare, but they should be received with the greatest caution, and had probably be better deferred for some months, when a second examination may reveal the cause. We have, of course, had no means in our first interview of ascertaining if the loss of flesh has been progressive, but a second, after some months' interval, will clear up this and other doubtful points in the case. Progressive emaciation is often the earliest symptom of phthisis or cancer.

344. It is most desirable that assurance companies should be able to refer to a standard of the relation of weight to height, but the data which admit of such a standard being constructed do not at present exist.*

345. What is required in a standard table is that it should show (1) the normal weight at maturity (say age 25 to 30) for every height; (2) the limits within which such weights may vary, either in excess or defect, consistently with perfect health and vigour; (3)

* The most complete investigations hitherto published were made by the late eminent physician, Dr. John Hutchinson. See the exhaustive paper by him on the Respiratory Functions, printed in the "Transactions of the Royal Medical and Chirurgical Society for 1846," Vol. XI., p. 137. The statistics compiled by the Anthropometric Committee of the British Association, during the years 1878—1881, may probably give rise to still further investigation.

the increase in weight that should be allowed for each year's increase in age.

The tables of *average* weights that are usually published do not afford any complete guide, inasmuch as an average result gives no indication of the *limits* of variation that may be allowed.

346. The late *W. B. Brent* submitted to the British Association* an ingenious plan for setting up minimum, normal, and maximum standards of weight, based on the calculated weight of men of the same proportions as certain Grecian statues [The Bronze Tumbler, The Dying Gladiator, Theseus (Brit. Mus.) and others] deduced for different heights on the assumption that the weight varies as the cube of the height. Subsequent investigations have shown, however, that the assumption on which Brent proceeded is not correct.† If the initial weight be taken for a height of say 5ft. 6in., it will be found that the calculated weights for all heights under this stature are less than they ought to be, and that they are greater for all heights over 5ft. 6in.

347. In default of an absolute standard, the following table has been compiled, taking Hutchinson's

* Reports for 1844 and 1845. Transactions pp. 82 and 80. Brent's Tables are not printed in the abstracts of his papers, but they will be found in the work of Dr. T. K. Chambers on Corpulence, p. 77. A table printed in Volume XXIII. of the "Journal of the Institute of Actuaries," p. 65, which is in use by certain Life Offices, is apparently constructed by taking the average of Brent's calculated weights deduced from the three statues mentioned in the text.

† "Anthropométrie," par Ad. Quetelet; Brussels, 1870. See also generally "Manual of Anthropometry," by Charles Roberts; London, 1878.

## TABLE OF RELATIVE HEIGHTS AND WEIGHTS.

| HEIGHT. | MINIMUM WEIGHT. | NORMAL WEIGHTS. | | MAXIMUM WEIGHT. | SELECTED OBESE PERSONS. | | | |
|---|---|---|---|---|---|---|---|---|
| | Hutchinson, less 20 per cent. | Macaulay. 2,000 persons average age 28. | Hutchinson, 2,648 males ages 15 to 40. | Hutchinson, plus 20 per cent. | Males. | | Females. | |
| ft. in. | lbs. | lbs. | lbs. | lbs. | lbs. | Age. | lbs. | Age. |
| 5 1 | 96 | 125 | 120 | 144 | 392 | 63 | — | — |
| 5 2 | 101 | 128 | 126 | 151 | — | — | 154 | 22 |
| 5 3 | 106 | 131 | 133 | 160 | 206 | 35 | 308 | 40 |
| 5 4 | 111 | 134 | 139 | 167 | 322 | 62 | 226 | 26 |
| 5 5 | 114 | 137½ | 142 | 170 | 224 | 20 | 196 | 26 |
| 5 6 | 116 | 141 | 145 | 174 | 244 | 30 | 217 | 40 |
| 5 7 | 118 | 145½ | 148 | 178 | 252 | 16 | 231 | 26 |
| 5 8 | 124 | 151 | 155 | 186 | 266 | 56 | 226 | 21 |
| 5 9 | 130 | 156½ | 162 | 194 | — | — | — | — |
| 5 10 | 135 | 161½ | 169 | 203 | 224 | 35 | 370 | 47 |
| 5 11 | 139 | 167 | 174 | 209 | — | — | — | — |
| 6 0 | 143 | 173 | 179* | 215 | — | — | — | — |
| 6 1 | — | — | — | — | 277 | 40 | — | — |

* Estimated.

The cases which showed the lowest weights have been selected.

Minimum and Maximum Weights of 1276 healthy men. (Hutchinson.)

| HEIGHT. | MINIMUM WEIGHTS. | | MAXIMUM WEIGHTS WITH GREATEST VITAL CAPACITY. | | MAXIMUM WEIGHTS. | |
|---|---|---|---|---|---|---|
| | Weight. | No. of Cases. | Weight. | No. of Cases. | Weight. | No. of Cases. |
| ft. in. ft. in. | lbs. | | lbs. | | lbs. | |
| 5 0 to 5 1 | 100—110 | 3 | 120—130 | 2 | 130—140 | 2 |
| 5 1 ,, 5 2 | do. | 8 | 140—150 | 1 | 170—180 | 1 |
| 5 2 ,, 5 3 | do. | 1 | 150—160 | 2 | 180—190 | 1 |
| 5 3 ,, 5 4 | do. | 3 | do. | 2 | do. | 2 |
| 5 4 ,, 5 5 | do. | 2 | do. | 10 | 160—170 | 6 |
| 5 5 ,, 5 6 | 110—120 | 16 | 180—190 | 2 | 180—190 | 2 |
| 5 6 ,, 5 7 | do. | 31 | do. | 2 | 190—200 | 3 |
| 5 7 ,, 5 8 | do. | 12 | 160—170 | 32 | do. | 2 |
| 5 8 ,, 5 9 | do. | 9 | do. | 45 | do. | 4 |
| 5 9 ,, 5 10 | do. | 3 | 170—180 | 15 | do. | 5 |
| 5 10 ,, 5 11 | do. | 2 | 180—190 | 8 | do. | 5 |
| 5 11 ,, 6 0 | 130—140 | 2 | 190—200 | 5 | do. | 5 |

Dr. Allen, in his work entitled "Medical Examinations for Life Insurance," gives a table of weights which agrees closely with Mr. Macaulay's results, but he gives no information as to the source of his data.

measurements of the average weights of 2,648 healthy men as the normal weight, and allowing an arbitrary variation of 20 per cent. on either side of the normal as the minimum and maximum limits. The table further contains, for the purpose of comparison, the weights of selected *obese* persons, and the minimum and maximum weights that entered into 1,276 of the cases that produced Hutchinson's average. The average weights deduced by another observer, Mr. T. B. Macaulay of Montreal, are also added.

348. On comparing the figures in the various columns given in the table there will be little hesitation in determining, with the help of measurements of the girth of chest, neck, thighs, and arms, and other information obtained from the Medical Examiner, whether the weight be mainly due to bone and muscle or to an excessive development of fat. The weight of the ordinary human skeleton, which rarely comes up to 14 lbs., might easily be doubled in a particular case without showing any remarkable weight to be attained. In all cases where the weight comes up to the maximum excess of twenty per cent. the strictest inquiry should be made, and the life passed only when the causes of the excess are satisfactorily explained.

349. *Dr. Hutchinson's* normal weights, which include the weight of clothes, were derived from careful measurements of the following healthy persons, all from 15 to 40 years of age.

| | | |
|---|---|---|
| Sailors (merchant service) ... ... ... | | 121 |
| London Fire Brigade and Thames and Metropolitan Police ... ... ... ... | | 302 |
| Paupers ... ... ... ... ... ... | | 129 |
| Mixed class (artisans) ... ... ... ... | | 370 |
| Grenadier and Royal Horse Guards ... ... | | 146 |
| Pugilists and wrestlers ... ... ... ... | | 24 |
| Printers ... ... ... ... ... ... | | 73 |
| Draymen ... ... ... ... ... ... | | 20 |
| Gentlemen ... ... ... ... ... | | 97 |
| Total measured by Dr. Hutchinson ... | | 1,282 |
| Chatham recruits measured by Dr. A. Smith ... | | 185 |
| Men in the prime of life measured by Mr. W. B. Brent ... ... ... ... ... | | 1,554 |
| Total ... ... | | 3,021 |
| Deduct cases under 5 feet ... ... | 26 | |
| ,, cases over 6 feet ... ... | 326 | |
| ,, sundry cases thrown out ... | 21 | |
| | | 373 |
| | | 2,648 |

Dr. Hutchinson's minimum and maximum weights were based on 1,276 out of the 1,282 cases measured by himself. The two columns of maxima show the great diminution in maximum weight when it is taken in conjunction with the maximum vital capacity, but the figures do not in all cases run regularly.

350. The cases of obese persons were selected and classified according to height from a table of 38 cases compiled by Dr. T. K. Chambers ("On Corpulence," page 139). In the case of the female, height 5 ft. 2 in., obesity commenced at the age of 20, after marriage, and the subject suffered from plethora. In the case of the male, height 5 ft. 10 in., obesity

commenced at the age of 28, and was hereditary. The subject suffered from lethargy and dyspepsia.

*Dr. Chambers's* complete table shows that out of 24 cases in which information as to the bony skeleton was elicited the obesity was, in 18 of these, associated with smallness of bones.

351. *Mr. T. B. Macaulay's* figures were based on 2,000 cases taken from the records of a Canadian Life Company, and are reported in the "Journal of the Institute of Actuaries," Vol. XXIII., page 62. Only healthy English-speaking lives were included. The average age at entry of lives assuring in the company in question was 28. Mr. Macaulay gives also the following interesting table, showing in two sections (1) the influence of age on weight and (2) the influence of occupation on weight, the height in both cases being sunk.

TABLE SHOWING THE INFLUENCE OF (1) AGE AND (2) OCCUPATION ON WEIGHT.

| AGES. | WEIGHT. | OCCUPATION. | WEIGHT. | OCCUPATION. | WEIGHT. |
|---|---|---|---|---|---|
| | lbs. | | lbs. | | lbs. |
| 16 to 20 | 142·5 | Tailors ... ... ... | 145·1 | Bankers, Insur. Managers, &c. | 154·2 |
| 21 ,, 25 | 149·6 | Clerks and Salesmen ... | 147·1 | Blacksmiths ... ... ... | 155·4 |
| 26 ,, 30 | 151·3 | Shoemakers and Saddlers ... | 148·0 | Agents, Brokers, &c. | 156·2 |
| 31 ,, 35 | 157·3 | Druggists ... ... ... | 148·1 | Commercial Travellers ... | 158·1 |
| 36 ,, 40 | 158·2 | Labourers ... ... ... | 148·3 | Barristers ... ... ... | 160·1 |
| 41 ,, 45 | 159·2 | Manufacturers ... ... | 151·1 | Doctors ... ... ... | 160·6 |
| 46 ,, 50 | 163·5 | Founders and Moulders .. | 151·3 | Farmers ... ... ... | 160·9 |
| 51 ,, 55 | 167·7 | Teachers ... ... ... | 151·4 | Masons, Bricklayers, &c. ... | 162·2 |
| 56 ,, 60 | 172·4 | Carpenters, Coopers, &c. ... | 152·6 | Clergymen ... ... ... | 163·7 |
| | | Machinists ... ... ... | 153·5 | Hotel-keepers, &c. ... ... | 166·7 |
| | | Merchants ... ... ... | 153·7 | Butchers ... ... ... | 169·3 |

## CHAPTER XV.

### CLAIMS.

352. When the death of an assured life takes place, a *claim* is sent in to the office by the legal owners of the policy. This application is accompanied by certificates of identity of the life assured, and of the Registrar of the district in which death occurred; as also by one from the medical attendant during the illness which proved fatal, together with other papers relative to the validity of the claim.

We have here only to deal with the medical certificate.

353. It cannot be too strongly impressed on the practitioner who has to certify the cause of death that he should be distinct in his statement, and avoid the use of medical terms which express only the symptoms, and not the cause of the fatal affection.

354. Thus *dropsy* is a final symptom of heart, liver, kidney, and other diseases, and should not be employed.

355. *Hæmorrhage*, again, may arise from many causes, as phthisis, aneurism, liver disease, &c. Thus, supposing death to have occurred from hæmoptysis from a cavity in the lung, the proper certificate would be "Phthisis—secondary hæmorrhage."

356. *Diarrhœa*, again, may be a symptom of many diseases, as phthisis, dysentery, typhoid, or of irritant poisoning, and the term should not be employed singly.

357. *Gastritis*, when certified as a cause of death, should always excite suspicion. We have known it used to cover or conceal irritant poisoning and intemperance. *Acute gastritis* as a single idiopathic disorder is almost unknown in Great Britain. In all cases when gastritis is sent in as a cause of death by the certifying practitioner, he should be required to state the symptoms during life, the duration of the sickness, and minute details as to the habits of the person so affected. A sudden attack of persistent vomiting with diarrhœa, leading within a week or two to a fatal issue, should never be received without careful inquiries as to the assumed cause of death.

358. It is recommended that the *nomenclature of diseases* as authorised and published by the College of Physicians should as far as possible be adopted.

359. *Old age* is another term which should not be used singly unless in rare instances of very advanced life. In such, life is generally ended by bronchitis, heart failure, &c., and the causes should be stated.

360. *Syncope*, again, often comes before us as a cause of death, but this symptom manifestly may belong to diseases of heart or of cerebral or kidney origin, or to exhaustion from any organic or other disorder affecting vital power.

361. *Childbirth or confinement* is frequently found as the assigned cause of death of young females. It occurs, perhaps, more frequently in the statement of a proposer regarding some near relative, than in the certified cause of death of a life which has become a claim, and there is perhaps no term which has given

rise to more delay and correspondence and trouble on the part of assurance offices.

It is well known that a search in the records of Somerset House often reveals causes of death very different from the assigned one, and that phthisis, or some form of chronic disease should have stood instead of *childbirth* in the certificate.

It is advised, then, that, both in the proposal form and in the death certificate, the term should be used only when a fatal issue has occurred from the actual results of labour, and that if possible, a more definite statement should be added to or substituted for the word "confinement." Thus puerperal fever, hæmorrhage, peritonitis, eclampsia, &c., should be added as indicated.

362. In estimating the validity of a claim submitted to him, the medical adviser of the company will deal only with the medical aspect of the case, the questions of identity or personation not belonging to his province.

He will, however, have occasionally to consider whether the death has been due to diseases which must have existed at the time when the life was accepted, and therefore, whether the statements in the proposal as to the previous state of health of the proposer and his habits were strictly true. If not true they would legally invalidate the claim. Thus if the proposer was aware that he had heart disease, diabetes, or syphilis, in an advanced degree, the claim would not be justified.

Again, if his habits had been intemperate, and he

had declared them to have not been so, the law would not allow such a claim to stand. Thus death occurring from *cirrhosis of the liver* within a few months of the issuing of the policy, it might become a medical question whether such disease could have originated within the period which had elapsed.

It would appear that in reply to such an allegation on the part of the company, it has been stated that the office had full opportunity of subjecting the proposer to the examination of their own medical officer before concluding the contract, but it is held that if the proposer keep back any important statement regarding his health at the time of assuring, the claim could not stand, even although he had passed the personal examination of the physician to the company.

With such questions the chief medical adviser of an office will occasionally have to deal, and although resistance to a claim is rarely made by offices, excepting on the strongest grounds, he may find questions submitted to him requiring all his acumen. For these we can lay down no positive rules.

# CHAPTER XVI.

## VARIETIES OF LIFE ASSURANCE AND OF MODES OF PAYMENT OF PREMIUM.

THE following paragraphs explain—

(1) The varieties of the Life Assurance Contract as affecting the risk undertaken.

(2) The variation in modes of payment of premium.

(3) The various modes of imposing a charge for extra risk and their effect. (Chap. XVII.)

363. The typical form of assurance is that for the whole term of life. According to the HM mortality,* the limit of life is reached at age 98. At that age every one ought to be dead according to the experience table, and the premium charged provides for the payment of every claim before that time. In theory, then, the sum in the policy ought to be paid at age 98 to the person assured, even if he be living, and the contract might be more strictly described as one for an assurance payable at the age of 98 or at previous death.

364. A very common type of assurance is that where the sum is made payable either at some earlier age (*e.g.*, age 50 or 60 or 65) than the limiting age or at previous death.

* *i.e.*, mortality deduced from the experience contributed by 20 British Life Offices of *Healthy Male* assured lives.

365. It is obvious that this affects very greatly the amount and quality of the risk to be run. It does so in two ways:—

(1) The risk is run for a shorter period of time, for which a correspondingly lower rate of premium than that for an assurance for the whole of life is sufficient.

366. (2) On the other hand, a further element is introduced into the assurance in the shape of an endowment payable at a particular age, and for this endowment a distinct additional portion of the premium is payable, which serves as an annual saving or accumulation towards the amount to be paid at maturity and as a gage or deposit in the hands of the company to be forfeited if the age be not reached.

367. In proportion as the term of the endowment is shortened, the risk of assurance becomes less, and almost tends to disappear, while the probability of having to pay the endowment increases. Thus the risk of assurance over which medical selection exercises its special function tends to transform itself into an investment risk which is the department of finance.

368. The following table shows the relative importance of the assurance-risk and the endowment-risk portions of the premium for certain selected ages at entry and terms of duration. For the sake of comparison the whole life premiums have been added.

## TABLE SHOWING THE ANALYSIS OF THE ENDOWMENT ASSURANCE PREMIUM.

*SPRAGUE'S SELECT H^M MORTALITY, 4 % INTEREST:—NO LOADING.*

| AGE. | WHOLE LIFE ASSURANCE. | ENDOWMENT ASSURANCE. NET PREMIUMS. | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | THIRTY YEARS' DURATION. | | | TWENTY YEARS' DURATION. | | | TEN YEARS' DURATION. | | | FIVE YEARS' DURATION. | | |
| | Net Premiums. | Total Premium. | Assurance Risk. | Endowment Risk. | Total Premium. | Assurance Risk. | Endowment Risk. | Total Premium. | Assurance Risk. | Endowment Risk. | Total Premium. | Assurance Risk. | Endowment Risk. |
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| 20 | 1 7 10 | 2 7 2 | 0 19 7 | 1 7 7 | 3 15 7 | 0 18 4 | 2 17 3 | 8 9 2 | 0 18 1 | 7 11 1 | 18 1 5 | 0 17 2 | 17 4 3 |
| 25 | 1 10 2 | 2 7 2 | 1 0 8 | 1 6 6 | 3 15 1 | 0 18 3 | 2 16 10 | 8 8 2 | 0 16 4 | 7 11 10 | 18 0 9 | 0 15 2 | 17 5 7 |
| 30 | 1 14 4 | 2 8 7 | 1 3 10 | 1 4 9 | 3 15 9 | 1 0 1 | 2 15 8 | 8 8 2 | 0 17 3 | 7 10 11 | 18 0 6 | 0 14 9 | 17 5 9 |
| 35 | 1 19 10 | 2 11 2 | 1 9 1 | 1 2 1 | 3 17 3 | 1 3 7 | 2 13 8 | 8 8 11 | 0 18 10 | 7 10 1 | 18 0 11 | 0 16 2 | 17 4 9 |
| 40 | 2 7 3 | 2 15 8 | 1 17 1 | 0 18 7 | 3 19 11 | 1 9 2 | 2 10 9 | 8 10 2 | 1 2 3 | 7 7 11 | 18 1 7 | 0 17 11 | 17 3 8 |

369. It will be seen that as a rule the assurance-risk premium increases with the age of the life assured, while the endowment-risk premium diminishes. At assuring ages the only exception is at ages 19—24, when statistics show that the chances of life increase with age. But the main point to be noted in the foregoing table is the proportion which the one premium bears to the other. For instance, at age 30 and duration whole term of life, the assurance premium is £1 14s. 4d. per cent. Here the assurance risk is of supreme importance, and the endowment risk does not appreciably affect the premiums charged. When the duration is 30 years, the two risks are of nearly equal importance. The assurance premium is £1 3s. 10d. per cent. and the endowment premium is £1 4s. 9d. per cent.; and lastly when the duration is 5 years the endowment premium is £17 5s. 9d. per cent., and the assurance premium is only 14s. 9d., or of comparatively trifling importance.

370. As far as medical selection is concerned, an endowment assurance brings into consideration an element of great importance, inasmuch as it cuts short the duration of the risk at a particular age, and the term may be so fixed as to exclude a considerable part of an extra risk that might be feared in the case of a whole life assurance. In underwriting a life assurance, what is to be guarded against is that the particular life does not possess sufficient stamina to carry it on to old age; either there may be some personal want of robustness, or there may be some breaking-down age in the family, or there may be the

chance of some inherited taint, as of gout or rheumatism, which will only begin to operate with serious effect in later life. In all of these cases a great deal may be done towards eliminating the extra risk by cutting the assurance short at the breaking-down age or somewhat earlier.

371. Any estimate such as is indicated in the preceding paragraph should be made with great caution, and should be left to the judgment of the Medical Adviser. It is sufficient if the Examiner indicate his opinion that a life should be assured for an endowment in preference to a whole life assurance. He should state his reasons for being of such an opinion, but he should refrain from forming any final judgment as to the duration for which an assurance should be granted. If he desire to indicate his feeling on this point, it should be done solely for the information of the Medical Adviser; and the practice of some Medical Examiners to intimate to the proposer on what terms he ought to be accepted cannot be too strongly reprehended.

372. There is one case of frequent occurrence where the adoption of an endowment assurance leads to no diminution whatever of the life risk to be run.* It is that in which consumption appears as a family inheritance. Here the extra risk falls in the earlier and not in the later years of life; and in such cases where if the assurance were for the whole term of life, an

* As shown in Paragraph 366 the *sum* involved at risk is somewhat diminished, but even this is only of practical importance when the term of the endowment is a *very* short one.

extra premium would be imposed, it is no compensation at all to transform the risk into an endowment assurance. The endowment portion of the premium is required to meet its own special risks, and the risk of inheritance of consumption not being eliminated, an extra premium must be imposed to cover it.

373. The foregoing arguments apply theoretically to an assurance for *a short term of years* without any endowment at the end of the term as well as to an endowment assurance. But there is a considerable practical difference between the two cases.

374. There is always a selection against the company proceeding on the part of proposers, who are frequently unconsciously impelled to seek for assurance because of a latent belief—indefinable, yet more or less well-grounded—that they will not attain to old age. The medical examination is instituted to guard against this selection, and the resultant, or outcome of the two opposing forces, is a counter-selection made by the company.

It is futile, however, to suppose that this counter-selection is always perfect, or discovers on all occasions all possible dangers.

It is important, then, to remember that a person who proposes for an endowment assurance gives, as it were, "hostages to the enemy." He first of all presents the important condition of being a believer in his own longevity, and in the next place he gives evidence of his good faith by paying a substantial additional premium for the privilege of receiving the sum assured at the end of the term.

375. Moreover, if all forecasts are falsified, and he should die a few years before the end of the term is reached, the loss that the company suffers is very much lessened by the accumulation of surplus premiums that has been going on to meet the eventual payment.

376. There is an absence of all such elements of security in the case of a *short term* assurance. The persons who assure for a term of years without endowment are those who wish to cover a temporary risk at the lowest possible outlay. It very frequently happens that this wish arises from the fact that the proposer is in some monetary embarrassment, and that the policy is desired as security. There is hence some added risk that the mental worry to which the proposer is subjected should influence unfavourably any personal deflections from the first class standard of health.

Short term assurances should always be scrutinised with especial care, and where an extra risk is involved the addition of a number of years to the age does not suffice to meet it. The method is quite unsuitable.

377. The same remarks apply to proposals for Contingent Assurances, or Assurances payable only in the event of one life, A, dying during the lifetime of another life, B, and to proposals for the purchase of Reversionary Annuities, that is, annuities to commence on the death of a life A, and to continue payable during the remainder of the lifetime of another life, B. Assurances of these two kinds are most frequently

effected by those who are anticipating their inheritance. The proposers are not in a condition of stable equilibrium as regards fortune, and it is very probable that they have outrun the constable through some folly of their own, and in doing so have put the strength of their constitution to a severe strain. On the other hand, B, the life assured against, is in all probability a life of more than average vitality, that has passed through the dangers of youth and middle life with undeteriorated health.

378. Assurances payable on the death of the first of two or more persons, or *Joint Life* assurances, and assurances payable on the death of the last of two or more persons, or *Last Survivor* assurances. The same rules apply in these cases as in the examination of single lives. It is necessary that both lives should be examined with equal care, *and have the same strict standard applied to each.* Any deficiency in the vitality of one life will not be compensated by the other presenting conditions of more than average strength or robustness. This is a point to which special attention should be paid, as a contrary notion frequently prevails.

379. There are various modes of payment of premium besides the more ordinary one of making the payment continuous and equal during the whole currency of the contract. The chief of these are :—

(1) Increasing Premiums.

(2) Terminable or Limited Premiums.

380. The most ordinary form of Increasing

Premiums is what is called the *Half Premium System.* In this case the premium is so adjusted that during the first five years the amount to be paid is only one-half of what is payable during the remainder of life. This method introduces a most important further element of selection against the company. During the first five years the assurance is obtained at the lowest possible outlay for the risk run, and at the end of the term the assured has the option of compelling the company to continue on the risk, irrespective of the state of his health. If he be in good health he will probably effect a new assurance on the same system, and drop the old one; if he be in bad health he will continue the old assurance, to the detriment of the company. Lives which are rated up or which for any reason fall below the first class standard should never be assured under this system.

381. *Terminable or Limited Payments.*—In this case the assured commutes the uniform premium during the whole term of the contract for a larger premium payable for a definite term of years only, as 5, 10, 15, or 20 years; or the premium may be paid in one single payment. Here a selection of another kind is brought in against the company, as the method is likely to be adopted mainly by those who are pretty sure of their own longevity, and who desire to compass the very desirable object of having no premium at all to pay in old age. In such cases the company foregoes a prospective gain that might be expected from the receipt of premiums during the later periods of life, and receives a larger payment for a certain

fixed term during life. The one set of payments is actuarially the exact equivalent of the other set.

382. The adoption of the *Limited Payment* system must not be accepted as compensation for an extra premium that would otherwise be imposed, although in some cases the method may be adopted as a compromise, and as giving the benefit of the doubt to the proposer when there is *hardly* sufficient reason to justify an extra, but perhaps very nearly so. The larger premium paid contains no compensation whatever for extra risk to be run. It operates solely in the direction of diminishing somewhat—more or less, according to the number of payments to be made—the loss that the company will suffer by the occurrence of an early claim, and against this has to be set the prospective diminution of gain to the company in the event of long life.

383. There are, however, some cases in which the *Limited Payment* plan may be combined with an extra premium to meet risks which are too hazardous to be taken at a uniform whole life premium on any terms. For instance: the occurrence of a *mitral murmur* is a most serious flaw, and used to be considered a fatal bar to the acceptance of a life. But if it be stipulated that the premiums be paid in, say, 11 payments, and if 10 years be added to the age, the risk is one that may reasonably be undertaken if the age of the life be not too far advanced. At age 40 these terms would necessitate the payment of £6 7s. 11d. per cent. for 11 years. This is an increase of £1 5s. 8d. only over the ordinary rate, but the company is made

reasonably safe from the fact that the premium with interest will in 13 or 14 years amount to the sum assured, while if the life attain a considerably greater longevity than was expected, he derives the benefit of having commuted all future premiums, and of having no payments to make.

# CHAPTER XVII.

## EXTRA CHARGES.

384. The chief causes for the imposition of extra premium may be classified as follows:—

(1) Family history of consumption, or other diseases which set in before middle life.

(2) Family history of gout, rheumatism, and other diseases which set in mainly after middle life.

(3) Flaws in personal health, defect in or excess of weight, &c.

(4) Unhealthy or dangerous occupation.

It is evident that each class requires separate consideration in the assessment of the necessary premium and that the same mode of applying an extra will not suit all cases.

385. It is necessary, therefore, to consider two things:—

(1) The amount of extra premium.

(2) The way in which it should or may be applied.

General rules only can be laid down, as an infinite variety of cases alike in type but differing in detail

present themselves for consideration. As a guide, however, to the mode of dealing with individual cases, the Appendix contains an abstract of cases that have occurred in actual practice, and of the rating that has been applied.

## FAMILY HISTORY OF DISEASES WHICH SET IN BEFORE MIDDLE LIFE.

386. *Family history of Consumption.*—This is the most widespread cause for extra rating, and one which it is most difficult to deal with. If it were possible to apply one general principle to the whole class, and charge, say, three years extra for one death from consumption, five years extra for two deaths, ten years extra for three deaths, &c., the matter would become a very simple one, and it is probable that the aggregate of the extra premiums over the whole class would cover the extra mortality, and admit of nearly all lives not actually suffering from consumption being accepted. But as in each case there is a wide variation of the probability of inheritance of the disease, regard being had to the age, build, and occupation of the proposer, the nearness in blood of the relatives that have died, the number of the family, and the persistence of the disease in preceding and collateral generations, it is necessary to discriminate.

387. If an average extra applicable to the whole class were applied, those who presented the most favourable conditions would assure on cheaper terms with a company acting on different rules, while those

only who would be rated up more heavily elsewhere would remain, and eventually entail heavy loss.

388. Statistics collected over a great number of years show that where there is simply a slight hereditary taint, and the personal history and condition of the proposer be unexceptionable, very liberal terms can be granted; but that where the hereditary taint is conjoined with some personal defect—as a flat or malformed chest—or with some unfavourable occupation, under the special circumstances of the cases—as a miller, inhaling large quantities of fine dust; a schoolmaster, exposed to harassing and trying duties, often in confined and badly ventilated class-rooms; or a clerk working for long hours in an unhealthy atmosphere, and without many opportunities for recreation—it is necessary in these cases to impose a heavy extra, and frequently to decline altogether.

389. The following is suggested as a scheme of extra rating in cases where the danger to be guarded against is the *inheritance of consumption.* It is assumed in all cases, unless otherwise specified, that personal condition and occupation are unexceptionable.

390. A—One death only in the family from consumption.

(*a*) If the life be not under 30 an acceptance at the ordinary rate may very frequently be granted. If the death be that of a parent it is necessary, however, to have

regard to the age at death, as there is often a family tendency for hereditary disease to set in about the same age.

391. (*b*) If the life be under 30 an extra cannot ordinarily be dispensed with, and the amount of extra will increase as the age descends. As a rule it is not worth while to add less than 10 years extra at the age of 20, and if the occupation be slightly unfavourable, *e.g.*, a clerk or schoolmaster, 15 or more years might be added; while on the other hand, if the death have been that of a brother or sister about the age of puberty, a smaller extra, 5 or 7 years, will suffice.

392. B—*Two or more deaths* from consumption, being father *or* mother, and not exceeding one-fifth of brothers or sisters.

(*a*) If the life be not under 40 and *have passed the age at which his relatives have died*, it may be possible, in many cases, to dispense with an extra even here. Certainly, this may be done, acting under the above qualification, if the life have attained 45 or 50.

393. (*b*) If the life be between ages 30 and 40 an extra of from 5 to 7 years will probably cover the risk.

394. (c) If the life be between ages 30 and 35, an extra of from 10 to 15 years at age 30, diminishing to 5 or 7 years at age 35, will probably be required.

395. C—*Father or mother and not exceeding one-third of brothers and sisters* dead from consumption.

(a) The same considerations that are stated in Paragraphs 390 and 392 must be attended to, and if the life have attained 45 an acceptance may be granted at the ordinary rate.

396. (b) At ages younger than 45 it will be important to consider *family resemblances*—whether the proposer be of the type of those who have survived or those who have succumbed—and in this class of cases an inquiry into the causes of death of the grandparents, aunts and uncles, is likely to throw an important light on family peculiarities as regards tendency to disease, and should always be made.

397. (c) Between ages 30 and 45, an extra, varying from 5 or 7 to 10 years, according to circumstances and age attained, will frequently meet the risk. Under the age of 30 the circumstances are likely to be so special that no rule can be laid down or even suggested.

398. D—*Both parents and not exceeding one-half of brothers or sisters* dead from consumption.

(*a*) Here we enter on a class of cases which, in many instances, it will be necessary to decline. If, however, the life have attained age 50 an acceptance may often be granted, sometimes even at the ordinary rate, if there be indications that the life has survived by inherent strength of constitution, like the solitary oak in a forest that has perished.

399. (*b*) If the life be under 50 it is impossible to lay down any rule, as everything will depend on the *personal* history, build, and occupation. It must, however, be constantly borne in mind that the younger the age the greater the danger.

## IMPOSITION OF EXTRA BY WAY OF DEDUCTION FROM SUM ASSURED.

400. It very frequently happens that the proposer refuses to pay an extra premium that is certainly justified by the circumstances of his family history, because he considers himself unlikely to develop the family taint.

401. In such cases an *alternative plan* of rating may be adopted, somewhat akin to the principle of "double or quits." If the proposer live up to his

expectation of life* he will have a policy for the full sum assured and free from any extra premium, but if he die before he attain his expectation the *sum assured will be subject to a deduction*, diminishing in amount with each year that he lives beyond the age at entry.

402. The only true principle of fixing the deduction is that of making the sum total of the values at entry of the various deductions that are to be made in the event of death in each particular year exactly equivalent to the value at entry of the extra premium for the whole of life that would have been imposed.

403. The Table on the opposite page shows the *deductions for quinquennial ages at entry*, from age 20 to age 60, both inclusive, corresponding to additions to the premium of 5s., 10s., 15s., and 20s. per cent. The calculations have been made on the basis of the HM Mortality at 4 per cent. interest, the age for valuation being taken as the *assumed* (or rated up) age, and the deduction being distributed over a term of years equal to the expectation of life at the *true* age.

404. There are various other empirical modes in vogue of fixing the deduction, but their tendency is unduly to diminish it, and care should be taken always to secure the equivalent of the whole life extra, otherwise the Office receives, *ex hypothesi*, inadequate compensation for the risk it runs. It is

* This is, of course, a limit arbitrarily chosen.

| Age at Entry. | Expectation of Life. | Annual extra premium per cent. (unloaded). | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 5s. | | 10s. | | 15s. | | 20s. | |
| | | Initial Deduction. | Rated up Age. | Initial Deduction. | Rated up Age. | Initial Deduction. | Rated up Age. | Initial Deduction. | Rated up Age. |
| | Years. | | | | | | | | |
| 20 | 42 | 37·5 | 27¾ | 61·0 | 32½ | 75·5 | 36½ | 86·0 | 39¼ |
| 25 | 38 | 36·0 | 30½ | 61·0 | 34½ | 75·5 | 38 | 86·0 | 40¾ |
| 30 | 35 | 33·0 | 34¼ | 55·0 | 37¾ | 71·0 | 40½ | 81·0 | 43 |
| 35 | 31 | 30·0 | 38¼ | 51·0 | 41 | 66·0 | 43½ | 75·5 | 45¾ |
| 40 | 27 | 26·5 | 42½ | 46·0 | 44¾ | 60·0 | 46¾ | 71·5 | 48½ |
| 45 | 24 | 22·0 | 47 | 39·0 | 48¾ | 51·0 | 50½ | 61·0 | 52 |
| 50 | 20 | 18·5 | 57½ | 33·0 | 53 | 45·0 | 54¼ | 55·0 | 55¼ |
| 55 | 17 | 15·0 | 56 | 27·0 | 57 | 38·0 | 58 | 47·0 | 58¾ |
| 60 | 14 | 11·5 | 60¾ | 21·0 | 61½ | 30·0 | 62¼ | 38·0 | 62¾ |

*Note.*—The table is read as follows:—A net extra premium of 10s. per cent. at age 30 is equivalent to an addition of 7¾ years to the age, and is equal in value to a deduction from the sum assured, commencing at £55 and diminishing by £1 11s. 5d. or $\frac{1}{35}$th part for each year survived until the original expectation of life at age 30 (35 years) has been outlived.

especially to be borne in mind that the large deduction during the first five years of assurance is very unlikely to fall in as gain to the company, because the life has just been medically selected, and that the deduction becomes reduced to very meagre proportions during the latter part of the expectation, and that just before this is the climacteric or critical age, especially for those who are exposed to the development of hereditary disease.

405. The mode of imposing a deduction from the sum assured *combined* with the adoption of the Limited Premium plan (*see* Paragraphs 381—383) will often admit of lives being accepted that would otherwise be unassurable (*see* Paragraph 399), but some addition should also be made to the premium paid to compensate the Office by a cash payment in any case for the special risk it has run.

406. A deduction from the sum assured would seem also to be the best way of meeting those cases where the proposer objects to vaccination as a safeguard against small-pox; but in this instance the deduction should remain constant *throughout life*, as it can only be charged in the event of death actually occurring from small-pox, and this danger is one that remains practically constant, and does not diminish with increasing age. As the Company receives compensation only in the event of the fatal issue to be guarded against taking place, the deduction should fairly follow the empirical rule of being equal to at least double the annual whole life addition that is considered sufficient.

407. The following table shows the amount of permanent deduction corresponding to additions of 5s., 7s. 6d., and 10s. per cent. to the annual premium.

| Extra (Unloaded. | Permanent Deduction from Sum Assured. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Ages at Entry. | | | | | | | | | |
| | 20 | | | 25 | | | 30 | | 35 | | | 40 | | |
| s. d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. |
| 5 0 | 28 | 13 | 0 | 25 | 19 | 0 | 23 | 1 | 0 | 20 | 5 | 0 | 17 | 11 | 0 |
| 7 6 | 37 | 12 | 0 | 34 | 9 | 0 | 31 | 0 | 0 | 27 | 12 | 0 | 24 | 4 | 0 |
| 10 0 | 44 | 11 | 0 | 41 | 4 | 0 | 37 | 9 | 0 | 33 | 13 | 0 | 29 | 17 | 0 |

*Note.*—The deduction is based on the principle of its equivalence in value to double the amount of annual extra stated in the margin, and the calculations are made at the rated-up ages for the doubled extra, and on the basis of the H$^{M}_{M}$ Mortality with 4 per cent. interest.

## FAMILY HISTORY OF DISEASES WHICH SET IN MAINLY AFTER MIDDLE LIFE.

408. *Gout.*—This is a typical case of disease which sets in after middle life, and it is therefore possible to exclude the risk by adopting the principle of Endowment Assurance, and making the assurance payable at an age not exceeding 60. If a whole life assurance be required, an extra of five years addition to the age will generally suffice, but the tendency has been in past years to *under-estimate* the importance of extra risk arising from this cause.

409. *Rheumatism.*—The dangers arising from a rheumatic diathesis have probably been under-estimated. If there be a history of rheumatism in the family, and especially if the proposer himself have suffered from rheumatic fever, an extra of not less than five years should be imposed. If there have been *two attacks* of rheumatic fever the case will probably be met by combining an extra payment with the Limited Premium system. Especial care must, of course, be taken to ascertain that the heart is not in any way affected.

410. The flaws in *personal health* are generally of a kind that require very substantial additions to the premium, and will best be met by combining an extra payment with the Limited Premium plan. They are, however, so various in character, and require such special consideration, that it is not possible to lay down rules. Reference, however, may be made to the Appendix, which contains several examples of extra rating to meet risks of this kind.

411. The same remarks apply with equal force to cases of *unhealthy or dangerous occupation.* Each case must be considered separately on its merits, but a uniform addition to the Whole Life premium will in most cases suffice.

412. Experience has shown that occupations which involve the dealing in retail of *wines, beer, or spirits,* are especially damaging to life. The minimum extra for a licensed victualler should be 20s., and in some towns and districts (London, for example) 30s. should be required. Recent investigations, based on the

experience of Assurance Offices, indicate that grocers should be charged about 7s. 6d. extra, hotel keepers 17s. 6d. extra, and licensed victuallers 25s. extra.

413. The danger to life and health in the case of dealers in intoxicating liquors arises, of course, from the facilities and temptations given to over-indulgence. The same causes operate in many other occupations. Thus commercial travellers, builders, and others who are exposed to vicissitudes of weather; butchers and cattle dealers, who have frequently to attend early morning markets, have almost forced on them the temptation to take a stimulant more frequently than is good for them, and to take it at times when it is especially hurtful—*e.g.*, before meals.

414. In all cases where the occupation involves the dealing in or temptation to indulge in intoxicants the most careful inquiry should be made as to past habits, and if strict temperance have not been the rule the result should be almost invariably to decline.

415. A class of risk often comes before Assurance Offices for consideration which it is not easy to define, but which embraces chiefly what are called "*West End lives.*" The constitution has been subjected to a more than usually severe strain in early manhood, which probably continues to a modified extent throughout life. This strain may or may not be associated with a family tendency to inherited disease, and there may possibly have been acquired some specific disease besides. The records of most Assurance Companies will show disastrous claims that have arisen on risks of this kind, and the practice has

been in imposing extras to treat them far too leniently. An addition of 5 or 7 years to the age on lives below the age of 30 is no compensation for the dangers that have still to be run. Such cases should be treated in the same way as those in which the family history shows a particular breaking-down age. This breaking-down age may be taken as, say age 50, and the premium for an Endowment assurance payable at this age should be charged for a Whole Life assurance. (*See* Table of Extra Premiums, page 18.)

416. In laying down this rule regard is had chiefly to lives from 20 to 25 or 28 years of age. If the age be older the terms may be made less exacting, by taking as the basis of fixing the premium an Endowment assurance payable at an older age than 50.

## CHAPTER XVIII.

### FORMS OF MEDICAL REPORT.

417. It is much to be desired that the questions put by Assurance Companies to Medical Examiners should be formulated on a general plan, so that no valuable time should be wasted. Further, if uniformity in the schedules issued by the leading Companies could be attained it would much facilitate business and clear the medical mind of many mistakes as to what is required.

418. The *sequence* of questions should be in the order in which the examiner would naturally approach his subject. Too great multiplicity of questions is to be avoided. If they are made to cover many minute points, it is possible that their apparent exhaustiveness may lead to the omission of some unexpected but perhaps really important fact. On the other hand, the Medical Examiner may feel that in replying to a long series of questions he has sufficiently done his duty.

419. It should always be left to the examiner to feel that while the questions are sufficiently general to cover the main body of facts to be reported on, the Company relies on his judgment to elicit and set down any fact in the given case which has a bearing on the possible duration of life.

420. In reporting, the Medical Examiner will naturally consider first the occupation, parentage and

family history of proposer, then his personal history as to health and disease; and, finally, proceed to a detailed examination of the various organs of the body.

*Form A* has been drawn up to allow of the facts being reported in this order, and is intended for use in all cases except when the Medical Examination is made at the Head Office.

421. It will be observed that no attempt is made to elicit the opinion of the Medical Examiner as to the rating to be applied to a life when it is not a first-class one. In such cases he is asked merely to place the life in one of three broad classes—fair, doubtful, or bad—according to the best of his judgment, and to state his reasons for such classification.

422. It will be apparent to the reader who has attentively considered what has been explained in Chaps. XVI. and XVII., as to the nature of the assurance contract and its many varieties, that in rating up a life there are a great many technical points to be taken into consideration, and that a long and special acquaintance with the many varieties of under-average life that offer themselves is necessary to the forming of a fair estimate of the risk.

In fact, it will be acknowledged that the assessment of lives for assurance is *an art by itself*, and that it should be left to the chief Medical Adviser in conjunction with the Actuary of the Company to advise the Directors as to the decision to be taken.

423. *Form B* has been drawn so as to record a brief summary of the facts reported, together with

the joint recommendation of Medical Adviser and Actuary.

424. When the examination is made at the Head Office by the chief Medical Adviser, a shorter form of report is made use of (*Form C*). In such cases the chief and most important use of the form is to place the facts on record. It is not necessary, as in the case of medical examinations made in the country, to enter into so much detail, inasmuch as the opportunity exists of verbally reporting to the Directors the exact impression left on the mind of the examiner as to the health and strength of the applicant, and verbal reports of this kind are in every way superior to the answers to a multitude of questions.

425. A Memorandum like that set out in *Form D* is frequently useful to the Medical Examiner, and may be issued with the form of report. It indicates some of the chief points on which full and precise information is desirable, and if attention be given to the suggestions therein contained, much additional labour and correspondence will be saved.

**Form A.**

# *MEDICAL EXAMINER'S REPORT.*

(CONFIDENTIAL.)

.....

.....

QUESTIONS to be answered in the handwriting or to the dictation of the Person whose Life is proposed to be Assured.

*A definite answer must be given to every question.*

1. State your Name, Profession or Occupation, and Age, and whether your occupation involves any special risk.

2. State the ages of your father and mother, and of your brothers and sisters, the present condition of health of those living, and, to the best of your knowledge, the causes of death of those dead.

*The Medical Examiner is particularly requested to obtain precise information as to the Cause of each Death, and not to accept, without further explanation,* such terms as "Childbirth," "Dropsy," "Natural Causes," &c., in lieu of the precise cause.

| | LIVING. | | DEAD. | |
|---|---|---|---|---|
| | Ages. | Present state of Health. | Ages at date of Death. | Causes of Death. |
| Father, | alive, aged..... | | Father, died, aged..... | |
| Mother, | alive, aged..... | | Mother, died, aged..... | |
| Brothers, | alive, aged..... | | Brothers, died, aged..... | |
| | alive, aged..... | | | |
| | alive, aged..... | | | |
| | alive, aged..... | | | |
| Sisters, | alive, aged..... | | Sisters, died, aged..... | |
| | alive, aged..... | | | |
| | alive, aged..... | | | |
| | alive, aged..... | | | |

**Form A** (*continued*).

| | |
|---|---|
| 3. Has any relative, living or dead, been affected with Consumption or Cancer? and are you aware of any tendency in your family to Rheumatism, Gout, Asthma, Palsy, Apoplexy, Insanity, or other hereditary diseases?<br>NOTE.—*If parents or brothers or sisters have died prematurely, or there be any other defect in the family history, give the ages, &c., of grandparents, uncles and aunts; also state which parent you resemble.* | |
| 4. What is the present and general state of your health? | |
| 5. For what diseases, and from whom, have you required professional assistance? How long is it since you last required such assistance? | |
| 6. Have you ever suffered from any complaint or affection—<br>(*a*) Of the Head (Fits, Faintings, Cerebral or Nervous Ailments, Discharge from the Ear, etc., included)?<br>(*b*) Of the Throat or Chest (Spitting of Blood, Asthma, and Palpitation included)?<br>(*c*) Of the Stomach, Liver, or Bowels (Piles and Fistula included)?<br>(*d*) Of the Urinary or Generative Organs? | (*a*) .....<br>(*b*) .....<br>(*c*) .....<br>(*d*) ..... |
| 7. Have you at any time been affected with Rheumatic Fever or Gout? How often? and what joints or organs of the body were affected? | |
| 8. Have you ever met with any serious personal injury that has left hurtful consequences? If so, state its nature, and as nearly as you can the date of its occurrence. | |
| 9. State as to your habits—<br>(1) What quantity of stimulant do you usually take daily?<br>(2) Have you always been strictly sober and temperate? | |
| 10. Are there any circumstances known to yourself which you think it right or proper to communicate, with a view to a fair judgment being formed regarding the risk of an Assurance on your life? | |

SIGNED in my presence, this ..... day of ..... 18

*Applicant's Signature* .....

*Medical Examiner's Signature* .....

**Form A** (*continued*). REPORT and OPINION by the MEDICAL EXAMINER.

| *QUESTIONS.* | *ANSWERS.* | |
|---|---|---|
| 1. (*a*) Are you personally acquainted with the person whose life is proposed to be assured? If so, how long have you known him? | (*a*) | |
| (*b*) Have you attended him professionally? If so, for what disorders? | (*b*) | |
| 2. Have you examined him by percussion and auscultation *under the dress*, so as to ascertain the state of the Heart and Lungs? What is the result of your examination? *If the number of pulsations after renewed testing continue to be over 80, please state to what cause you attribute the rapid pulse?* | | *Pulsations per minute.* Number..... *Respirations per minute.* Number..... |
| 3. Have you examined the region of the Liver, Stomach, and Bowels? What is the result of such examination? (*If he have Hernia, state its situation, whether it is reducible, and whether a properly-adjusted truss is worn.*) | | |
| 4. Have you examined the condition of the Nervous system? What is the result of your examination, especially with reference to the premonitory symptoms of Disease of the Brain or Spinal Cord? | | |
| 5. Have you examined the urine to ascertain whether albumen or sugar be present? Please report the condition of the urine and the result of your analysis. *If the sp. gr. is below 1·010, state any fact which in your opinion may account for it.* | | *Specific gravity of urine.* |
| 6. As to his habits and mode of life — (*a*) Do you consider him temperate? (*b*) Do you discover any indications of previous intemperance? | (*a*) (*b*) | |
| 7. What is his general conformation? (*a*) Figure, size, weight, and height? (*b*) Is there any peculiarity or deformity? (*c*) Does his appearance correspond with the age stated? | (*a*) (*b*) (*c*) | *Height.....ft.....ins.* *Weight.....stones...lbs.* *Circumference of Chest over the shirt.* .....*inches.* |

**Form A** (*concluded*). REPORT and OPINION by the MEDICAL EXAMINER.

| | |
|---|---|
| 8. Is his occupation in any way injurious to health? If so, please give particulars. | |
| 9. Do you consider it desirable to obtain a report from the private medical attendant or any other additional evidence? | |
| 10. (*a*) Leaving the Family History out of consideration, how would you classify his chances of long life—as first-class, or fair only, or doubtful or bad?<br>If other than first-class, please state your reasons. | (*a*) |
| (*b*) In your opinion, does the Proposer's Family History have any adverse influence on the prospects of his longevity? | (*b*) |
| 11. Are you of opinion that the applicant is as likely to live to *old age* as other healthy persons of his present age?<br>*The Medical Examiner is requested to state the age beyond which he thinks the proposer has no chance of surviving, if this be short of extreme old age.* | |
| 12. *In the case of a Female:*— | |
| (*a*) Past and present state of uterine functions? | (*a*) |
| (*b*) Is she at this time pregnant? | (*b*) |
| (*c*) Has she borne children, how many, or had miscarriage; and if so, have any consequences affecting or likely to affect her general health resulted? How long is it since her last child was born? | (*c*) |
| (*d*) Have her labours been attended with any unusual difficulty or danger; and is any risk to be apprehended in future? | (*d*) |

Dated this ..... day of ..... 18 .

*Medical Examiner's Signature* .....

To the Chief Medical Officer,

THE ..... LIFE OFFICE.

**Form A** (*continued*). REPORT and OPINION
EXAMINER.

| *QUESTIONS.* | *A.* | ...ship. |
|---|---|---|
| 1. (*a*) Are you personally acquainted with the person whose life is proposed to be assured? If so, how long have you known him? | ( , | |
| (*b*) Have you attended him professionally? If so, for what disorders? | | £. ... ... ... |
| 2. Have you examined him by percussion and auscultation ... dress, so as to ascertain the ... of the Heart and Lungs ... | | ... EATH. |
| What is the result of ... nation? | | ..... |
| *If the number of pulse ... newed testing ...* 80, *please state ... attribute ...* | | ..... ..... ..... |
| 3. Have you ... the Life ... What is ... nati... (*If ... t...* | | ..... ..... ..... ..... |
| 4. H ... V ... | | ..... ..... ..... ..... ..... ..... |
| | | *...ligible for Assurance* ..... *...al with the case*..... ..... |

...NION.

.....

... RECOMMENDATION.

.....*Actuary.*

**Form C.**

*... Examination by Chief Medical Adviser.*

.....**Life Assurance Company.**

**QUESTIONS to be answered in the handwriting (or to the dictation) of the Person whose Life is proposed to be Assured.**

| | |
|---|---|
| 1. State your Name, Profession or Occupation, and Age . . | |
| 2. What former Proposals for Assurance have you made? | |
| 3. State the particulars of your Family History . . . . . | |
| 4. State what previous illnesses and medical advice you have had. | |
| 5. Have you had Small-pox, or been successfully vaccinated? | |
| 6. State as to your habits—<br>(1.) What quantity of stimulant do you usually take daily?<br>(2.) Have you always been strictly sober and temperate? | |

SIGNED this.....day

*Applicant's Signature.* .....

of..... ...18

**Form C** (*concluded*).

## REPORT AND OPINION

BY THE

**CHIEF MEDICAL ADVISER of the ——— LIFE INSURANCE COMPANY.**

| | |
|---|---|
| Circulation— *Heart* . . . | |
| *Pulse* . . . | |
| Respiration . . . . | |
| Digestive System . . | |
| Kidneys . . . . . | |
| Nervous System . . . | |
| Habits . . . . . | |
| General Vigour . . . | |
| Special circumstances . | |

**OPINION ON THE CASE.**

*Date*..... *Signature*..... .....

**Form D.**

## MEMORANDUM.

***In order to avoid troubling Proposers with subsequent inquiries, it is desirable to elicit at the time of their examination, if not previously obtained by the Agent, fuller information on the following points. It is a matter of experience that the more exact and definite the information obtained as to unfavourable features in personal or family history, the more easy it is to secure favourable terms of acceptance.***

### I. FAMILY HISTORY.

Ask for the date and place of death and the Christian names (Surname also in case of a married Sister) if Parent, Brother, or Sister *have died prematurely, or if the cause of death be unknown.* This information will enable the Company to ascertain, free of cost to the Proposer, the "Certified cause of Death," by searching the registers at Somerset House.

The following are illustrations of the cases where the ascertainment of the Certified cause of Death is especially necessary:—

(*a*) Death of a relative under age 65, from "Old age," or "Natural causes."
(*b*) Death of a relative in middle age, from Bronchitis.
(*c*) Death of mother or sister, in confinement.
(*d*) Death from Dropsy, Atrophy, Rheumatism, and other not sufficiently definite causes.

### II. PERSONAL CONDITION.

If the weight be outside the maximum limit in the Table, in Par. 347, ascertain by definite measurement, girth of Chest, Abdomen, Neck, Arms, and Thighs, and state whether weight appears to be well distributed. Ascertain also whether there have been any rapid increase of weight.

### III. OCCUPATION, HABITS OF LIFE, &c.

Explain in the case of Builders, Plumbers, Butchers, Mechanical Engineers, &c., and wherever any special risk is involved in occupation:—

(*a*) Whether proposers are masters or journeymen?
(*b*) What is the magnitude of the business. How many men does proposer employ?
(*c*) What are the precise extra risks in the particular case?

For example:—

(*i.*) If in building trade, is his work mainly in the Office? How often has he to go on roofs or scaffolds?
(*ii.*) If he uses leads and oils, does he mix his own colours?
(*iii.*) If a butcher, does he attend early morning markets, or do the slaughtering himself?
(*iv.*) If his trade have any connection with Shipbuilding or Seafaring, is there any chance of his going to sea himself? And so on in other similar cases.

(*d*) What is the daily quantity of stimulants taken? Does the occupation in any way expose him to peculiar temptation?

State also in the case of Clerks and Commercial Travellers, with what Firms and in what trade they are engaged.

# APPENDIX I.

## TYPICAL CASES.

### INDEX.


| | CASES. |
|---|---|
| FAMILY HISTORY OF CONSUMPTION — (Life Personally Healthy) | 1 to 24 |
| FAMILY HISTORY OF CONSUMPTION — (Some Personal Defects) | 25 to 48 |
| HEART | 49 to 72 |
| OBESITY | 73 to 80 |
| GOUTY CASES | 81 to 88 |
| KIDNEYS | 89 to 92 |
| NERVOUS DISEASE | 93 to 96 |
| MISCELLANEOUS | 97 to 100 |

# TYPICAL CASES.

## ABSTRACTS.

1. THE following cases have all occurred in actual practice, and have been selected from *the records of various offices of the highest standing*. The terms offered have been accepted by the proposer and the contract completed by payment of the premium and issue of a policy, except when the case is marked with an asterisk (*).

2. As far as possible the unfavourable features have been set down which led to the extra rating being made, but there are generally present some points which modify the bare record either in extenuation or in aggravation of the risk. These it has been impossible to indicate in the abstracts, but due weight has, of course, been given to them in fixing the extra actually imposed.

3. It is suggested that classified records of extra rating in the manner adopted in this Appendix would be found of value by individual Companies as a means of promoting continuity of office practice, and as a guide to the correction of previous practice where it has been found defective.

*Case No.* **1.** *Occupation*—Merchant's Clerk. *Age* **21.**

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 32 | Congestion of Lungs. |
| *Mother* . . | 50 | — | ——— |

1 *Brother living, Age* 19.

DEATHS: Brother, age 19, and Sister, age 16, both of Consumption; 1 Sister, at 6 months, of Diarrhœa.

**Personal History:** *Height:* 5 *ft.* 9 *in.* *Weight:* 11 *st.*

Apex beat of heart slightly displaced inwards.

**Rating:** 25 years' addition.

---

*Case No.* **2.** *Occupation*—Clerk. *Age* 25.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 29 | Phthisis. |
| *Mother* . . | 46 | — | ——— |

2 *Brothers living, Ages* 27 *and* 23.

DEATHS: None.

**Personal History:** *Height:* 5 *ft.* 5 *in.* *Weight:* 10 *st.* 1 *lb.*

Healthy-looking man.

**Rating:** 7 years' addition.

---

*Case No.* **3.** *Occupation*—Farmer. *Age* 29

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | 63 | — | ——— |
| *Mother* . . | — | 46 | Phthisis. |

*An only Child.*

DEATHS: An Aunt (Mother's side) died of Phthisis; Father's Mother died age 90, and Mother's Mother age 91.

**Personal History:** *Height:* 5 *ft.* 10½ *in.* *Weight:* 12 *st.* 3 *lbs.*

Well-made, thick-set, muscular man. Full well formed chest, good expansion.

**Rating:** Ordinary rate for an Endowment Assurance, Death or 50.

---

*Case No.* **4.*** *Occupation*—Miller. *Age* 29.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 34 | Consumption. |
| *Mother* . . | — | 52 | do. |

1 *Brother living, Age* 31.

DEATHS: None.

**Personal History:** *Height:* 5 *ft.* 10 *in.* *Weight:* 11 *st.*

**Rating:** 20 years' addition.

*Case No.* 5. *Occupation*—Gentleman. *Age* 29.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | 63 | — | ——— |
| *Mother* . . | 63 | — | ——— |

9 *Brothers and Sisters living, Ages* 21 *to* 40.

DEATHS: 3 of Consumption, all at age 21.

**Personal History:** *Height:* 5 *ft.* 8 *in.* *Weight:* 10 *st.* 5 *lbs.*

Well built.

**Rating:** 7 years' addition.

---

*Case No.* 6. *Occupation*—Banker's Clerk. *Age* 29.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 45 | Consumption. |
| *Mother* . . | 53 | — | ——— |

4 *Brothers and Sisters living, Ages* 18 *to* 24.

DEATHS: 1 died in infancy.

**Personal History:** *Height:* 5 *ft.* 9 *in.* *Weight:* 10 *st.*

Healthy.

**Rating:** 7 years' addition.

---

*Case No.* 7. *Occupation*—Proprietor. *Age* 31.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 38 | Consumption. |
| *Mother* . . | 56 | In good health | ——— |

2 *Brothers and* 2 *Sisters living, Ages from* 25 *to* 34.

DEATHS: None. Except the Father, no other instance of Consumption in the family.

**Personal History:** *Height:* 6 *ft.* *Weight;* 13 *st.* 7 *lbs.*

Large muscular man, large well-formed chest.

**Rating:** Ordinary rate.

---

*Case No.* 8. *Occupation*—Clergyman. *Age* 31.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 32 | Consumption. |
| *Mother* . . | 64 | In fair health | ——— |

1 *Brother living, Age* 29; *once broke a bloodvessel.*

DEATHS: None. Some relatives on Father's side have died of Consumption.

**Personal History:** *Height:* 5 *ft.* 9 *in.* *Weight:* 10 *st.*

Light and delicate-looking man, but chest sound. Weight increasing.

**Rating:** 10 years' addition; premium in 19 payments. Rate £4 10*s.* per cent.

*Case No.* **9.** *Occupation*—Surgeon. *Age* 33.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 64 | Apoplexy. |
| *Mother* . . | 71 | — | ——— |

1 *Brother and* 2 *Sisters living, Ages* 34 *to* 43.

DEATHS: 1 Brother, of Phthisis, age 34.

**Personal History:** *Height:* 5 *ft.* 8½ *in. Weight:* 9 *st.* 11 *lbs.*

**Rating:** 5 years' addition.

---

*Case No.* **10.** *Occupation*—Farmer. *Age* 34.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 66 | Accident. |
| *Mother* . . | — | 63 | Unknown. |

3 *Sisters living.*

DEATHS: 2 Brothers, ages 42 and 46, both of Intemperance; 1 Sister, Phthisis.

**Personal History:**

Heart affected through strain.

**Rating:** 12 years' addition.

---

*Case No.* **11.** *Occupation*—Banker's Clerk. *Age* 34.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 49 | Consumption. |
| *Mother* . . | 65 | — | ——— |

2 *Brothers and* 1 *Sister living, Ages from* 30 *to* 37. *In good health.*

DEATHS: A Brother and Sister died in childhood; paternal Grandfather was drowned, and 1 paternal Uncle died age 68.

**Personal History:** *Height:* 5 *ft.* 11 *in. Weight:* 12 *st.* 8 *lbs.*

Very well-made man, large well-formed chest.

**Rating:** Ordinary rate.

---

*Case No.* **12.** *Occupation*—Corn Dealer. *Age* 34.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | 70 | — | ——— |
| *Mother* . . | — | 40 | Consumption. |

2 *Brothers and* 1 *Sister living, Ages* 32 *to* 39.

DEATHS: None.

**Personal History:** *Height:* 5 *ft.* 6½ *in. Weight:* 9 *st.* 10 *lbs.*

Good figure, muscular, well developed.

**Rating:** 5 years' addition.

*Case No.* **13.** *Occupation*—Boot and Shoe Manufacturer. *Age* 36.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 54 | Disease of Liver. |
| *Mother* . . | — | 72 | Chronic Phthisis. |

2 *Brothers and* 2 *Sisters living, Ages from* 33 *to* 46; *a Sister suffers from Chronic Phthisis.*

DEATHS: 1 Brother, age 14, Fever, and 2 Sisters, age 24, Renal Disease, and age 25, Phthisis.

**Personal History:** *Height:* 5 *ft.* 4 *in.* *Weight:* 11 *st.* 8 *lbs.*

Short, stout, well-built man. Chest: 40 in.; abdomen: 36 in.

**Rating:** Ordinary rate.

---

*Case No.* **14.** *Occupation*—Banker's Clerk. *Age* 38.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 55 | Result of Accident. |
| *Mother* . . | 63 | — | ——— |

4 *Brothers and* 3 *Sisters living, Ages from* 21 *to* 41.

DEATHS: 1 Brother, age 19, Consumption.

**Personal History:** *Height:* 5 *ft.* 7 *in.* *Weight:* 10 *st.* 1 *lb.*

Spare but muscular. Chest normal.

**Rating:** Ordinary rate.

---

*Case No.* **15.** *Occupation*—Underwriter. *Age* 38.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 72 | Disease of Kidneys. |
| *Mother* . . | — | 47 | Consumption. |

2 *Brothers living, Ages* 32 *and* 41.

DEATHS: 4 in infancy.

**Personal History:** *Height:* 5 *ft.* 2 *in.* *Weight:* 10 *st.* 10 *lbs.*

**Rating:** 5 years' addition.

---

*Case No.* **16.** *Occupation*—Naval Officer. *Age* 39.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 67 | ——— |
| *Mother* . . | — | 45 | Consumption. |

3 *Brothers and* 2 *Sisters living, Ages* 35 *to* 43.

DEATHS: 1 Sister, age 44, of Consumption, and 1 in infancy.

**Personal History:** *Height:* 5 *ft.* 10½ *in.* *Weight:* 13 *st.* 9½ *lbs.*

**Rating:** 6 years' addition.

*Case No.* **17.** *Occupation*—Accountant. *Age* 39.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 45 | Consumption. |
| *Mother* . . | — | 70 | Internal Abscess. |

2 *Brothers and* 1 *Sister living, Ages* 32 *to* 49.

DEATHS: 1 Brother and 2 Sisters of Consumption, ages 18, 19, and 27.

**Personal History:** *Height:* 5 *ft.* 9 *in. Weight:* 12 *st.*

Healthy and strong.

**Rating:** 10 years' addition; premium in 20 payments. Rate £5 1s. 6d. per cent. for with profit policy.

---

*Case No.* **18.** *Occupation*—Insurance Secretary. *Age* 40.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 62 | Bronchitis. |
| *Mother* . . | 74 | — | ——— |

2 *Brothers living, Ages* 48 *and* 51.

DEATHS: 1 Brother, age 23, Consumption; and 1 Sister, age 33, in Confinement (Surgical Delivery).

**Personal History:** *Height:* 5 *ft.* 9½ *inches. Weight:* 10 *st.* 10 *lbs.*

Muscular, well formed. Chest: 32–34 in.

**Rating:** Ordinary rate.

---

*Case No.* **19.*** *Occupation*—Yarn Merchant. *Age* 40.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 56 | Consumption. |
| *Mother* . . | — | 73 | Old Age. |

1 *Brother and* 1 *Sister living, Ages* 51 *and* 54.

DEATHS: 2 Brothers, ages 29 and 55, and 3 Sisters, ages 27, 29, and 31, all of Consumption.

**Personal History:** *Height:* 5 *ft.* 6½ *in. Weight:* 10 *st.* 4 *lbs.*

**Rating:** 15 years' addition.

---

*Case No.* **20.** *Occupation*—Woollen Manufacturer. *Age* 42.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | 72 | — | ——— |
| *Mother* . . | — | 45 | Consumption. |

3 *Brothers and* 5 *Sisters living, Ages* 36 *to* 52.

DEATHS: 3 Brothers, ages 13 (Erysipelas), 14 (Inflammation of Bowels), and 2 months; 1 Sister, age 28 (Bronchitis).

**Personal History:** *Height:* 5 *ft.* 10 *in. Weight:* 11 *st.* 4 *lbs.*

Well formed, strong, and healthy looking. Had an attack of Bronchitis 5 years ago.

**Rating:** 5 years' addition.

*Case No.* **21.** *Occupation*—Merchant. *Age* 44.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 75 | Old Age. |
| *Mother* . . | — | 41 | Phthisis. |

4 *Brothers living, 2 older and 2 younger.*

DEATHS: Sister, age 25, Phthisis.

**Personal History:**

Fistula in 1884, operated on and cured.

**Rating:** 5 years' addition.

---

*Case No.* **22.** *Occupation*—Barrister. *Age* 49.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 76 | Old Age. |
| *Mother* . . | 79 | — | ——— |

1 *Brother and* 1 *Sister living, Ages* 45 *and* 50.

DEATHS: 1 Brother, age 38, Consumption; and 1 Sister, age 48, Effects of Confinement.

**Personal History:** *Height:* 5 *ft.* 5 *in.* *Weight:* 9 *st.*

Fistula 10 years ago.

**Rating:** 5 years' addition.

---

*Case No.* **23.** *Occupation*—Farmer. *Age* 55.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 74 | Decay. |
| *Mother* . . | — | 36 | Typhoid Fever. |

3 *Sisters living, Ages from* 42 *to* 50; *also a maternal Aunt, Age* 80.

DEATHS: 1 Brother and 2 Sisters, all at age 40, and all of Consumption. Grandparents died, ages 66, 70, 70, and 72. No known instance of Consumption among collaterals.

**Personal History:** *Height:* 5 *ft.* 7½ *in.* *Weight:* 11 *st.*

Well formed, spare, and strong. Never seriously ill since Childhood.

**Rating:** Ordinary rate.

---

*Case No.* **24.** *Occupation*—Retired Tailor. *Age* 63.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 54 | Chest Disease. |
| *Mother* . . | — | 84 | Decay. |

DEATHS: 1 Sister of Cholera, age 30.

**Personal History:** Subject to slight Bronchial attacks in winter otherwise perfectly healthy.

**Rating:** 3 years' addition.

*Case No.* **25.*** *Occupation*—Chemist. *Age* **23.**

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* | — | 45 | Consumption. |
| *Mother* | 58 | — | ——— |

1 *Brother living, Age* 27.

DEATHS: Brother, age 30, and Sister, age 20, both of Consumption.

**Personal History:** *Height:* 5 *ft.* 10½ *in.* *Weight:* 11 *st.* 10 *lbs.*

Indigestion and Influenza 3 months ago.
Strumous appearance.

**Rating:** 30 years' addition. Premium in 20 payments.

---

*Case No.* **26.** *Occupation*—Mercantile Clerk. *Age* **24.**

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* | 59 | — | ——— |
| *Mother* | 63 | — | ——— |

2 *Brothers and* 2 *Sisters living, Ages from* 25 *to* 34.

DEATHS: 2 Brothers in infancy, and another age 16, of Phthisis.

**Personal History:** *Height:* 6 *ft.* *Weight:* 10 *st.* 8 *lbs.*

Long narrow chest. Respiration fair.

**Rating:** 14 years' addition.

---

*Case No.* **27.*** *Occupation*—Chartered Accountant. *Age* **24.**

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* | 53 | — | ——— |
| *Mother* | — | 29 | Consumption. |

1 *Sister living, Age about* 29.

DEATHS: 3 Brothers or Sisters died in infancy.

**Personal History:** *Height:* 5 *ft.* 6½ *in.* *Weight:* 10 *st.* 6 *lbs.*

Lungs emphysematous and right side of heart dilated.

**Rating:** 26 years' addition.

---

*Case No.* **28.*** *Occupation*—Solicitor. *Age* **25.**

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* | 64 | — | ——— |
| *Mother* | 60 | — | ——— |

5 *Brothers and* 1 *Sister living.*

DEATHS: Brother, age 19, and Sister, age 27, both of Consumption.

**Personal History:** *Height:* 5 *ft.* 5 *in.* *Weight:* 9 *st.* 1 *lb.*

Lame from hip-joint disease in childhood.
Slight enlargement of cervical glands.

**Rating:** 28 years' addition. Premium in 20 payments. Rate, £5 per cent.

*Case No.* **29.** *Occupation*—Solicitor. *Age* 25.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 48 | Consumption. |
| *Mother* . . | — | 48 | Pneumonia. |

3 *Brothers and* 2 *Sisters living, Ages from* 16 *to* 23.

DEATHS: 2 Uncles and 1 Aunt (paternal) died of Consumption.

**Personal History:** *Height:* 5 *ft.* 6 *in.* *Weight:* 10 *st.* 5 *lbs.*

Pneumonia in 1882.

**Rating:** 25 years' addition.

---

*Case No.* **30.** *Occupation*—Clerk. *Age* 26.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | 65 | — | (In failing health.) |
| *Mother* . . | — | 63 | Cancer of breast. |

1 *Brother, age* 31, *and* 1 *Sister, age* 28 (*delicate*), *both living.*

DEATHS: 1 Brother, age 25, broken blood-vessel in lungs; and 1 Sister, age 27, Consumption.

**Personal History:** *Height:* 5 *ft.* 7 *in.* *Weight:* 10 *st.*

Slight build. Heart's action intermittent.

**Rating:** 25 years' addition; premiums in 10 payments. Rate, £7 7s. 6d. p.c.

---

*Case No.* **31.** *Occupation*—Boot Dealer. *Age* 27.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 63 | Progressive Anæmia. |
| *Mother* . . | 64 | — | ——— |

3 *Sisters living, Ages from* 32 *to* 40.

DEATHS: Brother, age 27, of Consumption of Bowels.

**Personal History:** *Height:* 5 *ft.* 8 *in.* *Weight:* 8 *st.* 11 *lbs.*

Bronchitis in 1883 and 1885. Chest 28½–30 in. Looks delicate.

**Rating:** 20 years' addition.

---

*Case No.* **32.** *Occupation*—Bank Clerk. *Age* 27.

**Family History:**

| | AGE. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 45 | Consumption. |
| *Mother* . . | 67 | — | ——— |

4 *Brothers and* 2 *Sisters living, Ages from* 32 *to* 43.

DEATHS: Brother, age 21, of Consumption; and Sister, age 7, water in head; another Brother and Sister in infancy.

**Personal History:** *Height:* 5 *ft.* 8½ *in.* *Weight:* 9 *st.* 11 *lbs.*

Slight dulness under left clavicle.

**Rating:** Endowment Assurance—Death or 55. Rate £4 per cent.

*Case No.* **33.** *Occupation*—Journalist. *Age* 29.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | Not known. | | |
| *Mother* . . | — | 53 | Phthisis and Change of Life. |

*No Brothers or Sisters.*

**Personal History:** *Height:* 5 *ft.* 3 *in.* *Weight:* 8 *st.* 7 *lbs.*

Chest not very well formed. Expansion not good.

**Rating:** Endowment Assurance—Death or 55. 18 years' addition (life rate).

---

*Case No.* **34.*** *Occupation*—Engineer. *Age* 29.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | 71 | — | ——— |
| *Mother* . . | 62 | — | ——— |

1 *Brother alive, Age* 20, *and one Sister, Age* 33, *who have shown symptoms of Consumptive tendency.*

DEATHS: 2 Brothers, ages 18 and 20, and 2 Sisters, ages 15 and 23, all of Consumption. 1 Brother in infancy.

**Personal History:** *Height:* 5 *ft.* 7½*in.* *Weight:* 9 *st.* 13 *lbs.*

Pleurisy, which has left slight retraction and diminished expansion at lower part of left side.

**Rating:** Endowment Assurance—Death or 55. Rate £10 10s. per cent. in 10 payments.

---

*Case No.* **35.** *Occupation*—Gas Light Inspector. *Age* 30.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 48 | Phthisis. |
| *Mother* . . | — | 38 | Do. |

3 *Half-Sisters living, Ages from* 35 *to* 42.

DEATHS: Half-Brother, age 19, and Half-Sister, age 39, of Consumption.

**Personal History:** Heart hypertrophied.

**Rating:** 22 years' addition.

---

*Case No.* **36.*** *Occupation*—Tax Surveyor. *Age* 30.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 68 | Disease of Brain and Anasarca. |
| *Mother* . . | 68 | — | ——— |

2 *Sisters living, Ages from* 37 *to* 4[illegible].

DEATHS: 3 Brothers, ages [illegible] 32, [illegible] age 30, all of Consumptio[illegible] died [illegible]

**Personal History:** *Height:* [illegible] *Wt.*

Blood-spitting 8 years [illegible]

**Rating:** 25 years' additio[illegible]

*Case No.* **37.** *Occupation*—Accountant. *Age* 30.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 63 | Bowel Complaint. |
| *Mother* . . | — | 52 | Consumption. |

2 *Sisters living.*

DEATHS: 2 Brothers, ages 24 and 18, of Consumption; and 1 Sister, at 31, of Spinal Disease.

**Personal History:** Small man, light figure.

**Rating:** Endowment Assurance—Death or 55. 10 years' addition (life rate). Rate, £4 4s. per cent.

---

*Case No.* **38.*** *Occupation*—Merchant. *Age* 31.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 44 | Phthisis. |
| *Mother* . . | 65 | — | ——— |

1 *Brother and* 1 *Sister living, Ages* 28 *and* 38.

DEATHS: A Brother in infancy, and Sister, age 30, of Heart Disease.

**Personal History:** *Height:* 5 *ft.* 10 *in. Weight:* 10 *st. Chest,* 31½-33 *in.*

Congestion of Lungs, with Blood-spitting at 16. Breath sounds unsatisfactory.

**Rating:** 19 years' addition.

---

*Case No.* **39.** *Occupation*—Female. *Age* 32.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 81 | Old Age. |
| *Mother* . . | — | 30 | Consumption. |

2 *Brothers and* 2 *Sisters living, Ages from* 32 *to* 52.

DEATHS: A Brother, age 47, Heart Disease; and Sister, age 20, Consumption.

**Personal History:** *Height:* 5 *ft.* 4 *in. Weight:* 8 *st.* 7 *lbs.*

Pleurisy, which has left adhesion on left side. Married six months ago.

**Rating:** £7 7s. per cent. in 10 payments.

---

*Case No.* **40.*** *Occupation*—Clerk. *Age* 33.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 50 | Chronic Bronchitis. |
| *Mother* . . | 72 | — | ——— |

4 *Brothers and Sisters alive, Ages from* 30 *to* 45.

DEATHS: Brothers, age 15, Pneumonia, and 28, Empyema; Sister, age 25, also paternal Aunt and Grandmother, of Consumption.

**Personal History:** *Height:* 5 *ft.* 4 *in. Weight:* 8 *st.* 12 *lbs.*

Pleurisy in 1880. Expansion and resonance of right side diminished. Winter Cough.

**Rating:** 21 years' addition.

*Case No.* **41.*** { *Occupation*—Married Woman, Pregnant, 1st time (survivorship). } *Age* 34.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 39 | Phthisis. |
| *Mother* . . | 54 | — | ——— |

2 *Brothers and* 7 *Sisters living, Ages from* 16 *to* 30 (*mostly half-blood only*).

DEATHS: A Brother and Sister in infancy.

**Personal History**: Asthma following Whooping-cough. Polypus in right Ear, followed by Exostosis and loss of hearing on that side Slight trace of Sugar (sp. gr. 1,011).

**Rating**: 10 years' addition (life rate), and £1 p.c. further for first confinement.

---

*Case No.* **42.** *Occupation*—Insurance Secretary. *Age* 34.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 30 | Consumption. |
| *Mother* . . | 60 | — | ——— |

*An only Child.*

DEATHS: Some of his Father's Brothers and Sisters have also died of Consumption.

**Personal History**: *Height:* 5 *ft.* 5½ *in.* *Weight.* 8 *st.* 8½ *lbs.*

Slightly strumous aspect. Had Spitting of Blood 17 years ago. Left Lung shows traces of old Tubercular Disease.

**Rating**: £9 10s. per cent. in 10 payments.

---

*Case No.* **43.** *Occupation*—Chemical Manufacturer. *Age* 35.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 49 | Inflammation of Lungs. |
| *Mother* . . | 72 | — | ——— |

1 *Sister living, Age* 44.

DEATHS: Brother, age 44, Abdominal Phthisis; and Sister, age 27, Phthisis.

**Personal History**: Poor physique.

**Rating**: 11 years' addition.

---

*Case No.* **44.** *Occupation*—Patent Agent. *Age* 35.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | 64 | — | ——— |
| *Mother* . . | — | 33 | Phthisis. |

1 *Sister living, Age* 31.

DEATHS: Brother, age 19, Phthisis.

**Personal History**: Delicate; voice husky.

**Rating**: 17 years' addition.

*Case No.* **45.*** *Occupation*—Merchant. *Age* 37.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 47 | Rheumatic Fever. |
| *Mother* . . | 58 | — | ——— |

2 *Brothers and* 1 *Sister living, Ages from* 26 *to* 39.
Sister suffers from Phthisis.

**Personal History:** *Height:* 5 *ft.* 9½ *in.* *Weight:* 12 *st.* 4 *lbs.*
Breath sounds slightly harsh all over. Increased vocal resonance. Has had Rheumatism.

**Rating:** 13 years' addition.

---

*Case No.* **46.*** *Occupation*—Merchant. *Age* 38.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 66 | Apoplexy. |
| *Mother* . . | 77 | — | ——— |

1 *Brother and* 2 *Sisters living, Ages from* 30 *to* 42.
The Sister, age 42, suffers from Fistula.

DEATHS: Brother, age 37, Consumption; Sister, age 16, Diarrhœa.

**Personal History:** *Height:* 5 *ft.* 10¼ *in.* *Weight:* 10 *st.* 5 *lbs.*
Right Lung sounds a little exaggerated. Friction sounds posteriorly in scapular region. Anæmic Hæmic Bruit (systolic) heard over first part of sternum.

**Rating:** 15 years' addition.

---

*Case No.* **47.** *Occupation*—Coal Factor. *Age* 40.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 78 | Unknown. |
| *Mother* . . | 62 | — | ——— |

2 *Brothers and* 2 *Sisters living, Ages from* 20 *to* 35.

DEATHS: 2 Brothers, ages 21 and 24, Disease of Lungs; a brother of Typhus Fever, age 21; 1 Sister died in infancy.

**Personal History:** *Height:* 5 *ft.* 7¾ *in.* *Weight:* 10 *st.* 12 *lbs.*
Consolidation at Apex of Right Lung.

**Rating:** 15 years' addition.

---

*Case No.* **48.** *Occupation*—Clergyman. *Age* 46.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 75 | Softening of Brain. |
| *Mother* . . | — | 65 | Bronchitis. |

4 *Brothers and* 5 *Sisters living, Ages from* 33 *to* 54.

DEATHS: 2 Brothers, each age 19, Effusion on Brain, and a Sister in infancy.

**Personal History:** Curvature of Spine in 1855. Blood-spitting in 1863 and 1884.

**Rating:** 12 years' addition.

*Case No.* **49.** *Occupation*—Mercantile Clerk. *Age* **22.**

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 58 | Heart Disease. |
| *Mother* . . | — | 62 | Do. |

3 *Brothers and* 2 *Sisters living, Ages from* 25 *to* 40.

DEATHS: Brother, age 6, Scarlet Fever; and Sister, age 30, Heart Disease.

**Personal History:**

**Rating:** 15 years' addition.

---

*Case No.* **50.*** *Occupation*—Timber Merchant. *Age* 25.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | 56 | — | ——— |
| *Mother* . . | 46 | — | ——— |

2 *Brothers and* 5 *Sisters living, Ages from* 10 *to* 28.

DEATHS: 4 Brothers and Sisters in infancy.

**Personal History:** Severe Rheumatism followed by wasting and restored by Massage. Fair, slight, and delicate. Heart hypertrophied. Aortic regurgitation.

**Rating:** 27 years' addition.

---

*Case No.* **51.** *Occupation*—Solicitor. *Age* 26.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | 52 | — | ——— |
| *Mother* . . | 50 | — | ——— |

2 *Brothers and* 3 *Sisters living, Ages from* 12 *to* 19.

DEATHS: 1 Brother and 2 Sisters died in infancy.

**Personal History:** *Height:* 5 *ft.* 9 *in.* *Weight:* 9 *st.* 5 *lbs.*
Rheumatic Fever on two occasions. Mitral regurgitation.

**Rating:** 18 years' addition.

---

*Case No.* **52.** *Occupation*—Manufacturer. *Age* 26.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | 58 | — | ——— |
| *Mother* . . | 56 | — | ——— |

2 *Brothers and* 10 *Sisters living, Ages from* 15 *to* 37.

DEATHS: Brother and Sister, ages 2 and 3, Scarlet Fever.

**Personal History:** Acne badly (chest scarred with it). Heart enlarged. Aortic regurgitant murmur.

**Rating:** 30 years' addition.

*Case No.* **53.** *Occupation*—Bank Clerk. *Age* **27.**

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* | 58 | — | ——— |
| *Mother* | 49 | — | ——— |

5 *Brothers and* 6 *Sisters living, Ages from* 5 *to* 29.

DEATHS: 1 Sister died in infancy.

**Personal History:** *Height:* 5 *ft.* 9½ *in.* *Weight:* 9 *st.* 12 *lbs.*
Rheumatic Fever 12 years ago.
Heart enlarged. Incompetence of Mitral Valve.

**Rating:** 23 years' addition.

---

*Case No.* **54.** *Occupation*—Publisher's Clerk. *Age* 28.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* | 66 | — | ——— |
| *Mother* | — | 61 | Cerebral Effusion. |

3 *Brothers living, Ages from* 26 *to* 37.

DEATHS: Brother, age 28, Phthisis.

**Personal History:** Heart enlarged. Systolic aortic bruit.

**Rating:** 18 years' addition.

---

*Case No.* **55.** *Occupation*—Jeweller. *Age* 28.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* | — | 60 | Scarlet Fever—Bronchitis. |
| *Mother* | 56 | — | ——— |

1 *Brother and* 3 *Sisters living, Ages from* 16 *to* 24.

DEATHS: 2 Brothers in infancy.

**Personal History:** *Height:* 5 *ft* 6¾ *in.* *Weight:* 9 *st.* 5½ *lbs.*
Slight Hypertrophy of Heart, due to excess in athletics.

**Rating:** 5 years' addition. Premium in 22 payments.

---

*Case No.* **56.*** *Occupation*—Solicitor. *Age* 28.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* | 66 | — | ——— |
| *Mother* | 48 | — | ——— |

4 *Brothers and* 4 *Sisters living, Ages from* 18 *to* 38.

DEATHS: 1 died in infancy.

**Personal History:** *Height:* 5 *ft.* 10½ *in.* *Weight:* 10 *st.* 2 *lbs.*
Syphilis in 1880. Valvular disease of heart.

**Rating:** Endowment Assurance, Death or 60. Rate £4 10s. per cent.

*Case No.* **57.** *Occupation*—Mercantile Clerk. *Age* 29.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 57 | Apoplexy. |
| *Mother* . . | — | 67 | Bright's Disease. |

3 *Brothers and* 3 *Sisters living, Ages from* 27 *to* 36.

DEATHS: 2 Brothers, ages 5 months and 16 years, causes unknown.

**Personal History:** Rheumatic Fever in 1868, then mitral regurgitation, now (1888) compensating Hypertrophy.

**Rating:** 23 years' addition.

---

*Case No.* **58.*** *Occupation*—Clergyman. *Age* 30.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | 62 | — | ——— |
| *Mother* . . | 57 | — | ——— |

1 *Brother and* 3 *Sisters living, Ages from* 16 *to* 27.

DEATHS: 1 Sister died, age 5, of Diphtheria.

**Personal History:** *Height:* 6 *ft.* *Weight:* 13 *st.*
Has suffered from Ague and Rheumatism.
Systolic bruit audible over whole region of heart, loudest at apex.

**Rating:** 21 years' addition.

---

*Case No.* **59.** *Occupation*—Stationer. *Age* 31.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 60 | Stone in Bladder. |
| *Mother* . . | — | 45 | "Dropsy," probably Phthisis. |

2 *Brothers and* 3 *Sisters living, Ages from* 14 *to* 29.

DEATHS: None.

**Personal History:** *Height:* 5 *ft.* 8¼ *in.* *Weight:* 7 *st.* 10 *lbs.*
Chest 27—29 inches. Disease of Mitral Valve.

**Rating:** 25 years' addition.

---

*Case No.* **60.** *Occupation*—Merchant. *Age* 31.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 69 | Diabetes. |
| *Mother* . . | — | 60 | Internal Cancer. |

2 *Brothers and* 4 *Sisters living, Ages from* 27 *to* 36.

DEATHS: None.

**Personal History:** *Height:* 5 *ft.* 10 *in.* *Weight:* 11 *st.*
Slight reduplication of first sound at apex of heart.

**Rating:** 10 years' addition; premium in 11 payments. Or same addition (Life Rate) for Endowment Assurance—Death or 50.

*Case No.* **61.*** *Occupation*—Wine Merchant. *Age* 33.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 66 | Bronchitis. |
| *Mother* . . | — | 56 | Debility. |

2 *Brothers and* 1 *Sister living, Ages from* 24 *to* 40.

DEATHS: A Brother and Sister died in infancy.
A Brother delicate, and an Uncle Insane.

**Personal History:** *Height:* 5 *ft.* 5 *in.* *Weight:* 9 *st.* 11 *lbs.*
Occasional severe paroxysms of pain in region of heart and extreme nervous debility during part of last year. Heart excitable and suspicion of a basic systolic murmur.

**Rating:** 22 years' addition.

---

*Case No.* **62.*** *Occupation*—Meat Salesman. *Age* 33.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | 61 | — | ——— |
| *Mother* . . | — | 56 | Not known. |

5 *Brothers and* 2 *Sisters living, Ages from* 17 *to* 29.

DEATHS: Sister, aged 4, in infancy.

**Personal History:**

Heart Disease (aortic and mitral). Stricture.

**Rating:** Endowment Assurance, Death or 60. Rate £7 per cent.

---

*Case No.* **63.** *Occupation*—Auctioneer. *Age* 34.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 67 | Bladder and Kidney Disease, result of crush. |
| *Mother* . . | 76 | — | ——— |

3 *Brothers and* 1 *Sister living, Ages from* 37 *to* 49.

DEATHS: 1 Sister died, at 10, of Typhoid Fever.

**Personal History:** *Height:* 5 *ft.* 7 *in.* *Weight:* 12 *st.*

Rheumatism 4 years ago. Slight cardiac systolic murmur.

**Rating:** 16 years' addition.

---

*Case No.* **64.** *Occupation*—Public Schoolmaster. *Age* 37.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | 70 | — | ——— |
| *Mother* . . | 68 | — | ——— |

2 *Sisters living, Ages* 38 *and* 41.

DEATHS: Brother drowned.

**Personal History:** Rheumatic Fever at 12. Slight hæmoptysis in 1882. Systolic murmur at apex. Hypertrophy.

**Rating:** 15 years' addition.

*Case No.* **65.** *Occupation*—Burgh Surveyor. *Age* **37.**

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 82 | Apoplexy. |
| *Mother* . . | — | 74 | Old Age. |

1 *Sister living, Age about* 40.

DEATHS: Half-brother, age 45, Apoplexy; and a half-sister, of Heart Disease.

**Personal History:** *Height:* 5 *ft.* 8½ *in.* *Weight:* 14 *st.*
Has suffered from Angina Pectoris. Marked Arcus Senilis. Heart enlarged.

**Rating:** Endowment Assurance, Death or 60. Rate £12 per cent. in 10 payments.

---

*Case No.* **66.** *Occupation*—Coal Merchant. *Age* 38.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 49 | Heart Disease. |
| *Mother* . . | — | 40 | Unknown. |

2 *Brothers and* 2 *Sisters living, Ages from* 40 *to* 46.

DEATHS: None.

**Personal History:**
Abstainer. Looks older. Heart very irritable.

**Rating:** 14 years' addition.

---

*Case No.* **67.** *Occupation*—Underwriter. *Age* 42.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 63 | Nervous Exhaustion. |
| *Mother* . . | 74 | — | ——— |

1 *Brother and* 5 *Sisters living, Ages from* 42 *to* 56.

DEATHS: 2 Brothers, age 21, Phthisis, and age 33, exposure in Central Africa; and 2 Sisters, ages 30 and 36, both of Phthisis.

**Personal History:** *Height:* 5 *ft.* 10½ *in.* *Weight:* 10 *st.* 7 *lbs.*
Chest expands well. Respiration normal. Albumen in 1888. Urine now (1889) healthy. Arteries tortuous. Slight aortic bruit.

**Rating:** 14 years' addition.

---

*Case No.* **68.** *Occupation*—Accountant. *Age* 45.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 48 | Uncertain (Heart Disease or Sunstroke) |
| *Mother* . . | — | 83 | Old Age. |

3 *Brothers living, Ages from* 48 *to* 60.

DEATHS: Brother, age 21, Consumption; Brother, age 8, Scarlet Fever; and two others in infancy.

**Personal History:** *Height:* 5 *ft.* 10½ *in.* *Weight:* 9 *st.* 5 *lbs.*
Not robust. Systolic roughness over mitral valve.

**Rating:** 13 years' addition.

*Case No.* **69.*** *Occupation*—China and Glass Dealer. *Age* 45.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 65 | Malignant Disease. |
| *Mother* . . | — | 62 | Cancer of Stomach. |

3 *Brothers and* 3 *Sisters living, Ages from* 27 *to* 42.

DEATHS: 2 Brothers and a Sister died in infancy.

**Personal History:** *Height:* 5 *ft.* 4½ *in.* *Weight:* 10 *st.* 6 *lbs.*
Rheumatic Fever 20 years ago. Heart much enlarged. Arcus Senilis present.

**Rating:** Endowment Assurance, Death or 60. Rate £10 per cent.

---

*Case No.* **70.*** *Occupation*—Merchant. *Age* 47.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 59 | Paraplegia. |
| *Mother* . . | 68 | — | ——— |

2 *Brothers and* 3 *Sisters living, Ages from* 31 *to* 45.

DEATHS: A Sister died, about 23, of Uterine Disease; another, about 33, of Diphtheria.

**Personal History:** *Height:* 5 *ft.* 8½ *in.* *Weight:* 12 *st.* 7 *lbs.*
Aortic diastolic murmur. Pulsations of carotids abnormally visible in neck. Pulse uneven and jerky, and this character increased on raising arm.

**Rating:** £12 10s. per cent. in 10 payments.

---

*Case No.* **71.** *Occupation*—Master Plumber. *Age* 48.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 50 | Kidney Disease. |
| *Mother* . . | — | 78 | Old Age. |

4 *Brothers and Sisters living, Ages from* 44 *to* 52.

DEATHS: None.

**Personal History:** *Height:* 5 *ft.* 9 *in.* *Weight:* 10 *st.* 10 *lbs.*
Systolic murmur at apex of heart. Pulse 88, soft, full, and regular. Had gathering of right ear a year ago.

**Rating:** 12 years' addition.

---

*Case No.* **72.*** *Occupation*—Seed Merchant. *Age* 51.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 63 | Apoplexy. |
| *Mother* . . | 67 | — | ——— |

2 *Brothers and* 7 *Sisters living, Ages from* 25 *to* 48.

DEATHS: 1 Sister died in childhood.

**Personal History:** *Height:* 5 *ft.* *Weight* · 12 *st.*
Irregularity of Heart's action. Slow pulse (40.)

**Rating:** 12 years' addition.

*Case No.* **73.** *Occupation*—Solicitor. *Age* **36.**

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* | 77 | — | ——— |
| *Mother* | 68 | — | ——— |

2 *Brothers and* 1 *Sister living, Ages from* 34 *to* 46.

DEATHS: None.

**Personal History:** *Height:* 5 *ft.* 11 *in. Weight:* 16 *st.* 4 *lbs.*

Two very slight attacks of Gout in toe, the last 5 years ago.

Weight reduced from 18 st. in 1883 by abstemious living.

**Rating**: 7 years' addition.

---

*Case No.* **74.** *Occupation*—Cheesemonger. *Age* 40.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* | — | 53 | Inflammation of Bowels. |
| *Mother* | — | 53 | Bronchitis. |

2 *Brothers and* 1 *Sister, Ages from* 28 *to* 36.

DEATHS: None.

**Personal History:** *Height:* 5 *ft.* 9 *in. Weight:* 14 *st.* 10 *lbs.*

**Rating**: 8 years' addition.

---

*Case No.* **75.** *Occupation*—Farmer. *Age* 41.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* | — | 75 | Decay. |
| *Mother* | — | 83 | Do. |

1 *Brother and* 1 *Sister living, Ages* 56 *and* 59.

DEATHS: 1 Sister, age 55, Gout.

**Personal History:** *Height:* 5 *ft.* 10¾ *in. Weight:* 15 *st.* 7 *lbs.*

Excited Pulse (86 to 92, occasionally 102).

**Rating**: 5 years' addition.

---

*Case No.* **76.** *Occupation*—Builder. *Age* 46.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* | 72 | — | ——— |
| *Mother* | 82 | — | ——— |

1 *Brother and* 2 *Sisters living, Ages from* 40 *to* 47.

DEATHS: None.

**Personal History:** Eczema and liability to Bronchial attacks.

15 st. weight, and slightly above middle height.

**Rating**: 4 years' addition.

*Case No.* **77.** *Occupation*—Relieving Officer. *Age* **47.**

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 40 | Stoppage of Bowels. |
| *Mother* . . | 79 | — | ——— |

*No Brothers or Sisters living.*

DEATHS: 2 Brothers, age 40, Pleurisy, and age 49, Heart Disease.

**Personal History:** *Height:* 5 *ft.* 6 *in.* *Weight:* 14 *st.*

Broad-built, healthy, and vigorous.

**Rating:** 5 years' addition.

---

*Case No.* **78.** *Occupation*—Merchant. *Age* 49.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 83 | Decay. |
| *Mother* . . | — | 65 | Unknown. |

3 *Brothers and* 4 *Sisters living, Ages from* 35 *to* 59.

DEATHS: 1 Brother, age 52, Angina; and 1 Sister, age 30, Typhoid Fever.

**Personal History:** *Height:* 5 *ft.* 5 *in.* *Weight: about* 13 *st.*

Habits inactive. Temperate but full liver.

**Rating:** 7 years' addition.

---

*Case No.* **79.** *Occupation*—Notary Public. *Age* 54.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | 79 | — | ——— |
| *Mother* . . | — | 74 | Inflammation of Lungs. |

3 *Brothers and* 3 *Sisters living, Ages from* 33 *to* 52.

DEATHS: 1 Brother, age 28, Dysentery.

**Personal History:** *Height:* 5 *ft.* 4 *in.* *Weight:* 13 *st.* 2 *lbs.*

Short, stout; abdomen relaxed and full.

**Rating:** 3 years' addition.

---

*Case No.* **80.*** *Occupation*—Clergyman. *Age* 58.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 52 | Railway Accident. |
| *Mother* . . | — | Unknown. | Unknown. |

1 *Brother living, Age* 59.

DEATHS: A Brother, age 61, in Australia, and 2 Half-Sisters, ages 60 and 61, causes unknown.

**Personal History:** *Height:* 5 *ft.* 5 *in.* *Weight:* 14 *st.*

**Rating:** 5 years' addition.

*Case No.* **81.*** *Occupation*—Silversmith. *Age* 46.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* | — | 74 | Decay. |
| *Mother* | 82 | — | |

4 *Sisters living, Ages from* 49 *to* 55.

DEATHS: 1 Brother, age 36, of "Dissipation."

**Personal History:** *Height:* 5 *ft.* 1 *in.* *Weight:* 10 *st.* 7 *lbs.*

Severe and progressive Rheumatoid Arthritis. Slight Emphysema.

**Rating:** 13 years' addition.

---

*Case No.* **82.*** *Occupation*—Coal Merchant. *Age* 47.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* | — | 48 | Apoplexy. |
| *Mother* | 67 | — | |

2 *Brothers and* 5 *Sisters living, Ages from* 23 *to* 45.

DEATHS: 1 Sister, age 20, Fever; Father's Father and Mother died, ages 83 and 70.

**Personal History:** *Height:* 5 *ft.* 7 *in.* *Weight:* 12 *st.* 11 *lbs.*

Somewhat florid-looking man; full habit. Pulse a little hard—84. Indications from aspect and transient ailments that he is a markedly Gouty man.

**Rating:** 7 years' addition.

---

*Case No.* **83.** *Occupation*—Farmer. *Age* 48.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* | — | 64 | Apoplexy (was Gouty). |
| *Mother* | — | 28 | Bilious Fever. |

2 *Sisters living, Ages* 45 *and* 49.

DEATHS: None.

**Personal History:**

Somewhat full and florid.

**Rating:** 6 years' addition.

---

*Case No.* **84.** *Occupation*—Esquire. *Age* 49.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* | — | 76 | |
| *Mother* | 72 | — | |

2 *Brothers and* 5 *Sisters living, the youngest age* 34.

DEATHS: 1 Brother died in Crimea, age 19; and 2 Sisters, one age 35, of Typhoid Fever, and one in infancy.

**Personal History:** *Height:* 5 *ft.* 8 *in.* *Weight:* 10 *st.* 12 *lbs.*

Tendency to Gout.

**Rating:** 3 years' addition.

***Case No.* 85.** *Occupation*—Landed Proprietor. *Age* 50.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 63 | Erysipelas (had Gout). |
| *Mother* . . | 73 | — | ——— |

1 *Brother and* 3 *Sisters living, Ages from* 35 *to* 45. *A Cousin subject to Gout.*

DEATHS: A Brother, age 22, of an Accident.

**Personal History:** *Height:* 6 *ft. Weight:* 14 *st.*

Attacks of Gout in hands and feet. Slight Albuminuria.

**Rating:** 10 years' addition.

---

***Case No.* 86.** *Occupation*—Clergyman. *Age* 50.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 72 | Result of Hot Climate. |
| *Mother* . . | — | 82 | Old Age. |

2 *Brothers and* 2 *Sisters living, Ages from* 51 *to* 59.

DEATHS: 2 Brothers, ages 49 and 55, Result of Hot Climate; and a Sister, age 10, Scarlet Fever.

**Personal History:**

Gout. Trace of Albumen in 1888. Urine healthy now.

**Rating:** 6 years' addition.

---

***Case No.* 87.** *Occupation*—Ironmaster. *Age* 54.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 72 | Pneumonia. |
| *Mother* . . | — | 78 | Bronchitis. |

3 *Brothers and* 3 *Sisters living, Ages from* 41 *to* 56.

DEATHS: 2 Sisters—one, age 16, of Brain Fever; and one, age 54, Break-up of Constitution.

**Personal History:** Fresh-coloured, florid man; stoutly built, strong, and vigorous. Well-marked Gouty constitution.

**Rating:** 3 years' addition.

---

***Case No.* 88.** *Occupation*—Esquire. *Age* 62.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 76 | Enteritis. |
| *Mother* . . | — | 21 | Variola. |

*No Brothers nor Sisters living.*

**Personal History:** Gout and Gouty Bronchitis. Cerebral Congestion 6 months ago. Heart's action somewhat weak.

**Rating:** 11 years' addition.

*Case No.* **89.*** *Occupation*—Son of Solicitor. *Age* 24.
(Going to Transvaal.)

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* | 56 | — | ——— |
| *Mother* | — | 57 | Cancer. |

4 *Half-Brothers and* 1 *Half-Sister living, Ages from* 30 *to* 40.
1 *Sister living, Age* 20.

DEATHS: None.

**Personal History:** Slight Albuminuria three times detected.

**Rating:** 28 years' addition.

---

*Case No.* **90.** *Occupation*—Brassfounder. *Age* 37.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* | — | 55 | Heart Disease. |
| *Mother* | 65 | — | ——— |

3 *Brothers and* 5 *Sisters living, Ages from* 22 *to* 40.

DEATHS: 3 Brothers died in infancy.

**Personal History:** Albuminuria resulting from Scarlatina 18 years ago (Albumen 1%; Urea 1·5 p.c. Casts have been found occasionally. Possibly only one Kidney damaged.

**Rating:** 21 years' addition. Premium in 10 payments. Rate, £9 per cent. with profits.

---

*Case No.* **91.** *Occupation*—Police Magistrate. *Age* 41.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* | 76 | — | ——— |
| *Mother* | — | 78 | Old Age. |

1 *Sister living, Age* 45.

DEATHS: Sister, age 35, in Childbed. 1 Brother died in infancy.

**Personal History:** *Height:* 5 *ft.* 7½ *in.* *Weight:* 11 *st.* 3 *lbs.*
Rheumatism and Inflammation of Kidneys in 1879. Albumen in Urine.

**Rating:** 19 years' addition.

---

*Case No.* **92.*** *Occupation*—Solicitor. *Age* 44.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* | — | — | ——— |
| *Mother* | — | 47 | Angina Pectoris. |

5 *Brothers and Sisters living, Ages from* 28 *to* 50.

DEATHS: Brother, age 30, Abscess of Liver; and several Brothers and Sisters in infancy.

**Personal History:** *Height:* 5 *ft.* 7½ *in.* *Weight:* 14 *st.*
Syphilis at 19. Hypertrophy of Heart. Chronic Bright's disease.

**Rating:** 13 years' addition.

*Case No.* **93.** *Occupation*—Organist. *Age* 27.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | 64 (Has Epilepsy) | | ——— |
| *Mother* . . | 60 | — | ——— |

1 *Brother and* 2 *Sisters living, Ages from* 31 *to* 38.

DEATHS: Sister, age 24, Epilepsy.

**Personal History:** A small, pale, delicate man who has had Quinsy.

**Rating:** 10 years' addition.

---

*Case No.* **94.*** *Occupation*—Proprietor. *Age* 27.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 56 | Softening of Brain. |
| *Mother* . . | — | 60 | Disease of Lung. |

1 *Brother living in fairly good health. Many relatives of Mother have been subject to temporary Insanity.*

DEATHS: A Brother, age 19, and a Sister, age 27, both of Consumption; 2 Brothers in infancy.

**Personal History:** Hypochondria and Hemicrania a year ago.

**Rating:** Endowment Assurance—Death or 65. Rate £3 15s. per cent.

---

*Case No.* **95.** *Occupation*—Cashier to Solicitor. *Age* 34.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 58 | Killed. |
| *Mother* . . | — | 47 | Strangulated Hernia. |

2 *Brothers living, Ages* 42 *and* 45.

DEATHS: Brother, age 6, Scarlet Fever.

**Personal History:** Poor physique—Overworked. Piles. Epileptiform Fits.

**Rating:** 16 years' addition.

---

*Case No.* **96.** *Occupation*—Accountant. *Age* 40.

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | 62 | | |
| *Mother* . . | — | (x) | Heart Disease |

4 *Brothers and* 1 *Sister living. Ages from* 39 *to* 47.

DEATHS: 3 Brothers and Sisters died in Infancy.

**Personal History:** *Height:* 5 *ft.* 3 *in.* *Weight:* 11 st.

One very violent Epileptic attack 10 years ago. None since.

**Rating:** 7 years' addition.

*Case No.* **97.** *Occupation*—Banker's Clerk. *Age* **28.**

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | 55 | — | ——— |
| *Mother* . . | 58 | — | ——— |

2 *Brothers living, Ages* 26 *and* 29.

DEATHS: None.

**Personal History:** Markedly Anæmic—Palpitation—Urine Phosphatic.

**Rating:** Endowment Assurance—Death or 50. 7 years' addition (life rate).

---

*Case No.* **98.** *Occupation*—Secretary of a Public Company. *Age* **31.**

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 65 | Unknown. |
| *Mother* . . | — | 45 | Do. |

*An only Child.*

**Personal History:** *Height:* 5 *ft.* 7½ *in.* *Weight:* 12 *st.* 10 *lbs.*

Eleven months Insane 7 years previously.

**Rating:** 24 years' addition.

---

*Case No.* **99.** *Occupation*—Surveyor (School Board). *Age* **32.**

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | 72 | — | ——— |
| *Mother* . . | 66 | — | ——— |

2 *Brothers and* 3 *Sisters living, Ages from* 30 *to* 39.

DEATHS: 3 Brothers—age 27, Bright's Disease; age 27, Phthisis, and one in infancy; and 3 Sisters—age 7, Brain Fever, and 2 under 1 year.

**Personal History:** Marked Varicose Veins in both legs.

**Rating:** 10 years' addition.

---

*Case No.* **100.** *Occupation*—Solicitor. *Age* **49.**

**Family History:**

| | AGES. IF ALIVE. | AT DEATH. | CAUSE OF DEATH. |
|---|---|---|---|
| *Father* . . | — | 76 | Decay. |
| *Mother* . . | 81 | — | ——— |

2 *Sisters living, Ages* 44 *and* 47.

DEATHS: Sister, age 36, Paralysis.

**Personal History:** Has somewhat lost caste—a pale, grave-looking man—Heart weak.

**Rating:** 7 years' addition.

# APPENDIX II.

NOTE.—The figures in the following Tables are extracted* and re-arranged from Tables J, K, and L, in the Letter by Wm. Ogle, Esq., M.D., addressed to the Registrar-General, and contained in the Supplement to the Forty-fifth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England.

The comparative numbers of deaths are those that would occur annually in each industry out of 64,641 males in that industry from 25 to 65 years of age, of whom 41,920 were under and 22,721 were over 45 years of age. They were deduced by abstracting a sample of the causes of deaths in each industry (500 deaths with causes being considered the minimum sample), and dividing out the total mortality in the industry to the several causes by the proportions existing in the sample. In the case of (1) Fishermen, (2) Filemakers, (3) Hosiery manufacture, and (4) Miners in Cornwall, the minimum was not reached in the Register from 1880—1882, and the search was extended to the Registers of additional years.

Occupations Nos. 1 to 8 are grouped together to show the comparative mortality of Males in air of different degrees of purity; and Occupations Nos. 9 to 20 to show the comparative mortality of those inhaling different kinds of dust. The most striking features are seen in the deaths from Phthisis and diseases of the Respiratory Organs. Similarly the excessive mortality from Alcoholism, Liver Disease, Gout, and other diseases due more or less to intemperance, will be observed for the group of Occupations Nos. 21 to 26.

* By kind permission of Dr. Ogle.

COMPARATIVE MORTALITY OF MALES, 25 TO 65 YEARS OF AGE, IN DIFFERENT DEATH RATE PER 1,000 LIVING. DEDUCED FROM THE DEATH LIVING AT THE CENSUS OF 1881.

| Reference Number. | Occupation. | Number of Deaths in Sample (*see* Note, previous page). | Comparative Number | | | |
|---|---|---|---|---|---|---|
| | | | Diseases of Nervous System. | Suicide. | Diseases of Circulatory System. | Phthisis. |
| — | All Males ... ... ... ... | — | 119 | 14 | 120 | 220 |
| 1 | Fisherman ... ... ... ... | 552 | 81 | 13 | 153 | 108 |
| 2 | Farmer ... ... ... ... ... | 1,992 | 81 | 17 | 84 | 103 |
| 3 | Labourer (10 Agricultural Counties) ... | 2,394 | 80 | 9 | 97 | 122 |
| 4 | Gardener, Nurseryman ... ... ... | 635 | 63 | 11 | 82 | 121 |
| 5 | Grocer ... ... ... ... ... | 785 | 107 | 17 | 107 | 167 |
| 6 | Draper, Manchester Warehouseman ... | 528 | 109 | 5 | 75 | 301 |
| 7 | Tailor ... ... ... ... ... | 1,149 | 144 | 16 | 127 | 285 |
| 8 | Printer ... ... ... ... ... | 678 | 90 | 8 | 93 | 461 |
| 9 | Hosiery Manufacture (Leics. & Notts.) | 529 | 114 | 22 | 104 | 168 |
| 10 | Miner (Staffordshire) ... ... ... | 1,003 | 81 | 3 | 104 | 102 |
| 11 | Carpenter, Joiner ... ... ... | 1,274 | 89 | 17 | 104 | 204 |
| 12 | Baker, Confectioner ... ... ... | 629 | 136 | 26 | 131 | 212 |
| 13 | Builder, Mason, Bricklayer ... ... | 1,559 | 88 | 14 | 114 | 252 |
| 14 | Wool Manufacture (Yorkshire) ... | 1,278 | 127 | 15 | 142 | 257 |
| 15 | Cotton, Linen Manufacture (Lancs.) ... | 1,278 | 142 | * | 112 | 272 |
| 16 | Stone, Slate, Quarrier ... ... ... | 1,124 | 83 | 11 | 91 | 308 |
| 17 | Cutler, Scissors Maker ... ... ... | 928 | 190 | * | 111 | 371 |
| 18 | Filemaker ... ... ... ... | 528 | 262 | * | 180 | 433 |
| 19 | Earthenware Manufacture ... ... | 881 | 140 | * | 160 | 473 |
| 20 | Miner (Cornwall) ... .. ... | 927 | 117 | 4 | 111 | 690 |
| 21 | Commercial Traveller ... ... ... | 663 | 139 | 31 | 100 | 240 |
| 22 | Butcher ... ... ... ... ... | 1,125 | 139 | 23 | 132 | 261 |
| 23 | Brewer ... .. ... ... ... | 595 | 144 | 11 | 165 | 334 |
| 24 | Cab, Omnibus Service ... ... ... | 953 | 134 | 16 | 160 | 359 |
| 25 | Innkeeper, Publican, &c. ... ... | 1,246 | 200 | 26 | 140 | 295 |
| 26 | Costermonger, Hawker, Street Seller | 680 | 207 | 44 | 227 | 475 |
| 27 | Shoemaker ... ... ... ... | 1,635 | 122 | 17 | 114 | 254 |
| 28 | Blacksmith ... ... ... ... | 872 | 95 | 11 | 121 | 216 |
| 29 | Plumber, Painter, Glazier ... ... | 1,169 | 167 | 21 | 140 | 246 |

* *The deaths from Suicide were not separated*

NOTE.—The comparative mortality figure of Miners in different districts is as follows:—Ironstone districts, 834; Durham and Northumberland, 873; Staffordshire, 929; Lancashire, above Table are given as fairly representative of the class of Miners, excluding Miners in

OCCUPATIONS, FROM ALL AND SEVERAL CAUSES; AND THE MEAN ANNUAL REGISTERS FOR THE YEARS 1880, 1881, AND 1882, AND THE NUMBERS

| OF DEATHS, FROM 25 TO 65 YEARS OF AGE, ARISING FROM | | | | | | | | | | Mean Annual Death Rates per 1,000 Living. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diseases of Respiratory System. | Diseases of Urinary System. | Liver Diseases. | Other Diseases of Digestive System. | Alcoholism. | Gout. | Plumbism. | Accident. | All Other Causes. | All Causes (Comparative Mortality Figure). | Ages. 25—45. | Ages. 45—65. |
| 182 | 41 | 39 | 38 | 10 | 3 | 1 | 67 | 146 | 1,000 | 10·16 | 25·27 |
| 90 | 14 | 32 | 35 | 4 | — | — | 152 | 115 | 797 | 8·32 | 19·74 |
| 99 | 31 | 41 | 30 | 6 | 2 | — | 30 | 107 | 631 | 6·09 | 16·53 |
| 156 | 22 | 20 | 43 | 1 | 1 | — | 33 | 117 | 701 | 7·13 | 17·68 |
| 111 | 39 | 18 | 22 | 2 | 1 | — | 24 | 105 | 599 | 5·52 | 16·19 |
| 116 | 48 | 52 | 31 | 10 | 2 | — | 14 | 100 | 771 | 8·00 | 19·16 |
| 129 | 37 | 35 | 38 | 8 | 2 | — | 23 | 121 | 883 | 9·70 | 20·96 |
| 186 | 45 | 48 | 42 | 11 | 4 | — | 18 | 125 | 1,051 | 10·73 | 26·47 |
| 166 | 30 | 28 | 32 | 3 | — | 5 | 24 | 131 | 1,071 | 11·12 | 26·60 |
| 115 | 42 | 16 | 23 | 1 | — | — | 16 | 96 | 717 | 6·69 | 19·22 |
| 260 | 38 | 20 | 28 | 1 | — | — | 172 | 120 | 929 | 7·81 | 26·50 |
| 133 | 39 | 36 | 30 | 4 | 2 | — | 38 | 124 | 820 | 7·77 | 21·74 |
| 186 | 40 | 46 | 26 | 15 | 2 | — | 21 | 117 | 958 | 8·70 | 26·12 |
| 201 | 49 | 30 | 34 | 5 | 3 | — | 45 | 134 | 969 | 9·25 | 25·59 |
| 205 | 36 | 36 | 40 | 4 | — | — | 27 | 143 | 1,032 | 9·71 | 27·50 |
| 271 | 32 | 43 | 32 | 3 | — | — | 30 | 151 | 1,088 | 9·99 | 29·44 |
| 274 | 24 | 25 | 38 | 5 | — | — | 148 | 115 | 1,122 | 9·95 | 31·04 |
| 389 | 35 | 30 | 31 | 3 | — | — | 17 | 132 | 1,309 | 12·30 | 34·94 |
| 350 | 123 | 41 | 32 | 3 | — | 41 | 6 | 196 | 1,667 | 15·29 | 45·14 |
| 645 | 49 | 49 | 34 | 8 | — | 10 | 24 | 150 | 1,742 | 13·70 | 51·39 |
| 458 | 38 | 40 | 56 | 2 | — | — | 117 | 206 | 1,839 | 14·77 | 53·69 |
| 147 | 44 | 61 | 26 | 23 | 6 | — | 36 | 95 | 948 | 9·04 | 25·03 |
| 208 | 55 | 96 | 33 | 23 | 5 | — | 35 | 160 | 1,170 | 12·16 | 29·08 |
| 236 | 55 | 96 | 46 | 25 | 9 | — | 64 | 176 | 1,361 | 13·90 | 34·25 |
| 341 | 65 | 54 | 31 | 33 | 11 | — | 84 | 194 | 1,482 | 15·39 | 36·83 |
| 217 | 83 | 240 | 37 | 55 | 13 | — | 45 | 170 | 1,521 | 18·02 | 33·68 |
| 420 | 69 | 47 | 66 | 19 | 3 | — | 53 | 249 | 1,879 | 20·26 | 45·33 |
| 157 | 44 | 32 | 30 | 4 | 1 | — | 17 | 129 | 921 | 9·31 | 23·36 |
| 204 | 44 | 31 | 35 | 8 | — | — | 49 | 159 | 973 | 9·29 | 25·67 |
| 185 | 100 | 48 | 38 | 12 | 10 | 21 | 73 | 141 | 1,202 | 11·07 | 32·49 |

*in this case from the deaths from Nervous Diseases.*

Derbyshire and Nottinghamshire, 734; West Riding, Yorks, 772; North Riding and other 929; South Wales and Monmouthshire, 1,081. The figures relating to Staffordshire in the Cornwall.

TABLE SHOWING THE DEATH RATES AND COMPARATIVE MORTALITY FIGURES, 1880—2, OF MALES 25—65 YEARS IN DIFFERENT OCCUPATIONS NOT INCLUDED IN THE FOREGOING TABLE.

| Occupation. | Mean Annual Death-rate per 1,000 Living. | | Comparative Mortality Figure. |
|---|---|---|---|
| | 25—45. | 45—65. | 25—65. |
| All Males ... ... ... ... | 10·16 | 25·27 | 1,000 |
| Males in Selected Healthy Districts ... | 8·47 | 19·74 | 804 |
| Occupied Males... ... ... ... | 9·71 | 24·63 | 967 |
| Unoccupied Males ... .. ... | 32·43 | 36·20 | 2,182 |
| Clergyman ... ... ... ... | 4·64 | 15·93 | 556 |
| Schoolmaster, &c. ... ... ... | 6·41 | 19·84 | 719 |
| Barrister, Solicitor ... ... ... | 7·54 | 23·13 | 842 |
| Artist, Engraver, Architect ... ... | 8·39 | 25·07 | 921 |
| Physician, &c. ... ... ... ... | 11·57 | 28·03 | 1,122 |
| Musician, Music Master ... ... | 13·78 | 32·39 | 1,314 |
| Commercial Clerk, &c. ... ... | 10·48 | 24·49 | 996 |
| Law Clerk ... ... ... ... | 10·77 | 30·79 | 1,151 |
| Coal Merchant ... ... ... ... | 6·90 | 20·62 | 758 |
| Bookseller, Stationer ... ... ... | 8·53 | 20·57 | 825 |
| General Shopkeeper ... ... ... | 9·12 | 21·23 | 865 |
| Ironmonger ... ... ... ... | 8·42 | 23·87 | 895 |
| Fishmonger, Poulterer ... ... ... | 10·53 | 23·45 | 974 |
| Tobacconist ... ... ... ... | 11·14 | 23·46 | 1,000 |
| Cheesemonger, &c. ... ... ... | 9·48 | 26·90 | 1,009 |
| Chemist, Druggist ... ... ... | 10·58 | 25·16 | 1,015 |
| Greengrocer, Fruiterer ... ... ... | 10·04 | 26·57 | 1,025 |
| Paper Manufacture ... ... ... | 6·48 | 19·62 | 717 |
| Lace Manufacture ... ... ... | 6·78 | 20·71 | 755 |
| Silk Manufacture ... ... . . | 7·81 | 22·79 | 845 |
| Watch and Clock Maker ... ... | 9·26 | 22·64 | 903 |
| Currier ... ... ... ... ... | 8·56 | 24·07 | 906 |
| Tanner ... ... ... ... .. | 7·97 | 25·37 | 911 |
| Soap, Glue, Manure Manufacture ... | 7·31 | 27·57 | 933 |
| Carpet, Rug Manufacture ... ... | 9·48 | 24·10 | 945 |
| Saddler ... ... ... ... ... | 9·19 | 26·49 | 987 |
| Dyer, Bleacher, &c. ... ... ... | 9·46 | 27·08 | 1,012 |
| Bookbinder ... ... ... ... | 11·73 | 29·72* | 1,167 |
| Glass Manufacture ... ... ... | 11·21 | 31·71 | 1,190 |
| Hairdresser ... ... ... ... | 13·64 | 33·25 | 1,327 |

* *This rate is based on less than* 5,000 *years of life.*

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